DOCUMENT RESUME

ED 084 985 HE 004 874

AUTHOR Counelis, James Steve
TITLE Estimates in Futures: Projections, Planning, and the University Budget.
INSTITUTION San Francisco Univ., Calif. Office of Institutional Studies.
PUB DATE 17 Nov 72
NOTE 113p.

EDRS PRICE MF-$0.65 HC-$6.58
DESCRIPTORS Budgets; *Decision Making; *Educational Administration; *Enrollment Projections; Expenditures; *Higher Education; Planning; *Policy Formation; Prediction; Statistical Analysis; Tables (Data)
IDENTIFIERS *University of San Francisco

ABSTRACT

One role for institutional research within the university's budget is to provide objective data and informed judgements to help the responsible decisionmaking of the university organization. This report attempts to fulfill this function in organizational intelligence. In the university, as in all responsibly operated enterprises, projections of incomes and expenditures are necessary. This document contains statistical charts and trend line graphs on estimating enrollment and credit hours for full and part-time students to aid in the decisionmaking at collegs and universities. The author presents an explanation of the use of institutional research in the university budgeting process, including the data and method used in the report. Statistical charts and trend-line graphs are then presented using the University of San Francisco as a basis for the predictions. (Author/PG)

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ESTIMATES IN FUTURES: PROJECTIONS, PLANNING, AND THE UNIVERSITY BUDGET

by

James Steve Counelis

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THE UNIVERSITY OF SAN FRANCISCO

Office of Institutional Studies

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San Francisco, California 94117

November 17, 1972

W I L L I A M S H A K E S P E A R E:

What's past is prologue.

---The Tempest, Act II, Scene 1

W I L L I A M W O R D S W O R T H:

Books! 'tis a dull and endless strife:
  Come, hear the woodland linnet,
How sweet his music! on my life,
  There's more of wisdom in it.

And hark! how blithe the throstle sings!
  He, too, is no mean preacher:
Come forth into the light of things,
  Let Nature be your teacher.

---"The Tables Turned"

PREFACE

Though originally designed on a more holistic and less detailed basis in terms of individual schools and colleges, this study was redesigned and enlarged to its present form and size under the direction of the Reverend Edmond J. Smyth, S.J., Acting President of the University. Of him, I am pleased to acknowledge his leadership in this matter, his generosity of spirit, and his genuine tolerance for differences in opinion.

Of the following deans and directors, I am privileged to have learned much and I appreciate deeply their grace and charity in discussing and amending these results toward more meaningful ends: The Reverend John H. Martin, S.J., Dean of the Graduate Division; Dean C. Delos Putz, Jr. of the School of Law; Dr. Lloyd D. Luckmann, Dean of the Colleges of Arts and Sciences; Dr. William J. Regan, Dean of the College of Business of Administration; Sister M. Geraldine McDonnell, S.M., Dean of the School of Nursing; Dr. Edward J. Griffin, Dean of the School of Education; Dr. Anthony E. Seidl, Director of the Summer Session; Mrs. Marilyn Quinn, assistant to the late Reverend Gerald A. Sugrue, S.J., Director of the Evening College; the Reverend Andrew C. Boss, S.J., Director of the Labor-Management School; and Dr. Augustine P. Donoghue, Director of Admissions.

Of my own staff in the Office of Institutional Studies, I am always proud to cite their constructive service and diligence. Of my confrere, Mr. William J. Dillon, I am pleased to acknowledge his aid and competence in making this study possible. Of Mr. John M. O'Rourke, undergraduate research assistant, I am grateful for his aid in certain details. Of Mr. Paul D'Anna, undergraduate computer programmer, I am delighted to note with praise his computer work that made these mathematical and statistical results possible. And of Ms. Diane Pederson, I am delighted to note her warm and generous spirit of good will and good humor as well as her competence and technical proficiency in typing and graphics that made this large manuscript what it is in format today. Indeed I am most privileged and grateful to have such a marvelous group of friends and colleagues. To all, I extend my thanks.

Of course, the responsibility for the factual and interpretational character of this report rests with me as it should.

JSC

Office of Institutional Studies
The University of San Francisco
November 17, 1972

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ESTIMATES IN FUTURES: PROJECTIONS, PLANNING AND THE UNIVERSITY BUDGET

by

James Steve Counelis[+]

Institutional Research and the University Budgeting Process:

Institutional research is a cybernetic reality-testing process for the university. Institutional research provides the university with organizational intelligence about itself, about the environment in which it is privileged to live, and their intersect. Through wise use of organizational intelligence, university goal-seeking can materialize into goal achievement. Without organizational intelligence, the university looses control of itself, it goes into one crisis after another, which crises lead to organizational dissociation and on to paroxysmal death. And those familiar with the history of American higher education as well as the current scene are well acquainted with the fact that death is no stranger to American institutions of higher learning.

Though not usually understood in these terms, university budgets are academic and other plans for university futures in resource al-

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[+]Dr. James Steve Counelis is Director of the Office of Institutional Studies and Associate Professor of Education in the School of Education, The University of San Francisco, San Francisco, California 94117.

locational form. And thus the university budget contains within it estimates of university futures. The plural form of "future" is used to refer to the collective futures of the university community of staff, faculty, and students, and to some expectant role in calendrical time down the pike. But also the investment notion is involved in this use of "futures" wherein the budget is viewed as current payments for future returns in human and real capital.

One role for institutional research within the university's process of budget construction and budget decision-making is to provide objective data, objectifying methods and measures so that reasoned, informed, and prudent judgments can be made by the responsible budget decision-making authorities of the university organization. This report attempts to fulfill this function in organizational intelligence.

In the university as in all responsibly operated enterprises, projections of incomes and expenditures are necessary. In fact these projections are the easiest part of budget-making. But the utility of such projections assumes well-enough developed operational goals. For though objective data are useful information and "concretized" projections are important functions in budget development, the answers to the crucial questions as to what the university is all about steer the budget allocational patterns to those goals implied by the answers. And though one can always say that each budget is a transitional conserving budget, that in itself is a value commited goal, one dedicated for the status quo to be continued into the future. I suppose that when the rates of social change were slower and institutions were smaller and simpler in structure,

the time vector as possessing both transitional and conserving functions appeared reasonable. But in our own day, the vector of time is telescoped; and the absurdity that time is both transitional and conserving is manifested baldly. In our own situation at the University of San Francisco, the real questions as to the university's goals for next year have not been posed. What will be our Occam's razor for decision-making at budget time?

Projections of incomes and expenditures are future-directed variables. These variables of the future are measured partially by anticipated enrollments, the number of student credit hours purchased, and the amount of estimated instructional and support services required. The data and the method for estimating FY 1973-1974 enrollments and student credit hours follows.

Data and Method: Their Assumptions and Meaning:

The management information system of the University of San Francisco is a crude mélangè of manual and machine records. Though this source of data has not been gathered in the best professional manner to insure validity and reliability, these records are all we have. They must be used with caution.

The method employed here to arrive at estimates for FY 1973-1974 enrollments and student credit hours was the standard mathematical and statistical procedure called regression analysis. In simplest terms, this algorithm used the natural historical data (e.g., student enroll-

ments/term and student credit hours/term) to calculate a trend line equation. The trend line equation was then used to extrapolate the estimated value of the desired variable for the next desired period of time. Hence there are two variables involved in any one trend line equation, viz., (1) the independent variable of time, designated uniformly by the letter X; (2) the dependent variable (that is, the variable to be estimated for the next time period) which was either enrollments or student credit hours, designated uniformly by the letter Y. On the accompanying graphs, the X axis or time dimension is always the horizontal axis; and the Y axis or the variable to be estimated for the next time period is always the vertical axis. In the charts and trend line graphs that detail this report all variables and measurements are clearly labeled.

The formal character of the regression algorithm is quite indifferent to the ontic character of the data, though the measurements need be interval or ratio scales. But more important is the meaning that is to be attached to the trend line equation generated through the natural historical data of the university and the extrapolated value of the estimated variable for the next period of time. That meaning rests in the important assumption that lies behind the use of regression analysis. That assumption is aptly capsuled in the Shakespearean line "What's past is prologue." Being mathematically built upon a particular empirical time series, the trend line equation contains empirically within it the capsuled experience for given time intervals. The user of the equation must assume the continuance of those conditions which generated that particular set of empirical data so formally capsuled in the trend line

equation. But here is the rub! One does not know whether the same conditions will obtain in the future. Also the use of the field personnel who are closest to the scene comes to the fore; their experience and direct involvement can provide some useful clues. Unlike the apparent "law-like" or "rule-like" character of natural phenomena that seem to have fewer degrees of freedom under laboratory conditions, human behavior (individual or collective) manifests infinite degrees of freedom. Therefore, human behavior exhibits a greater degree of contingency about future behavior of particular persons and groups than do natural phenomena. Short of occult methods, the use of historical and natural trend data for projective purposes is reasonable and about the only systematic processes for objectively estimating future values on given variables. In an analogical sense, we are following Wordsworth dictum "Let Nature be your teacher," when we use the natural history of the university as our teacher for the future.

The reader probably noted that the term "prediction" has not been used. This is so because it carries a scientific denotation of such "rule-like" precision and accuracy as given by the well known formula for acceleration, viz., $s = .5gt^2$. However the terms "projections" and "estimates" are used throughout this report because they seem to convey better the connotation of contingency and possible error in the estimates provided here for FY 1973-1974 enrollments and student credit hours. The terms "projections" and "estimates" must be read as caveates, or warnings, or admonition to caution, given the shallow validity of the data, the contingency of human behavior in the specific future instance of 1973-1974, and the opacity of the future.

Budgetary Decision-Making and Estimates of the Future:

As noted at the beginning of this report, institutional research provides organizational intelligence to the university for reality-testing and cybernetic reasons. Such organizational intelligence as the FY 1973-1974 estimates on enrollments and student credit hours is provided to the university as an aid in budget construction. The decision-making authority who has responsibility for final budget decisions must be convinced of the reasonableness of the estimates provided by institutional research procedures. That authority must make the decision to accept, reject, or modify the estimates as seems reasonable to him or them. Organizationally, however, the responsibility for actual decisions as to what is included as estimates within the university budget never devolves upon others. Thus all budgetary estimates of income and expenditures found in the final budget document are the sole responsibility of the accountable authority for decisions on the budget. See Appendix A document.

Datal Lexicon:

For purposes of clarity of the categories used in this report, the following definitions are given:

(1) Academic Year: The academic year is defined to be the following school terms in the sequence given, viz., summer, fall, intersession, and spring.

(2) Budgeted Instructional Area: A budgeted instructional area refers to a resource allocation and expense center within the

budget's structure that is designated for instructional service and its support. Such a center is not necessarily co-terminal with the school and college structure of the university, e.g., the Graduate Division, the Summer Session, Intersession, and Evening College.

(3) Courses-Graduate and Professional: Graduate and professional courses are those designated in the University Catalogue by numbers in the 200's and 300's.

(4) Courses-Noncredit: Noncredit courses are those university taught courses to which no unit credit value has been assigned.

(5) Courses-Undergraduate: Undergraduate courses are those designated in the University Catalogue by the numbers 001 through 199.

(6) Fiscal Year: The university's fiscal year is defined to begin on July 1 of one year and end on June 30 of the following year. Also, the academic year is co-terminal with the fiscal year, viz., summer, fall, intersession, and spring.

(7) Full Time Student: The full time student is defined as one who is enrolled and pursuing a program of 12 or more semester credit hours.

(8) Part Time Student: The part time student is defined as one who is enrolled and pursuing a program of 11 semester credit hours or less.

These definitions have been uniformly observed and any variance from these by any of the several schools and colleges would account for differences in the data used.

FY 1973-1974 Estimates:

All FY 1973-1974 estimates of enrollments and student credit hours are summarized in two tables. These are Summary Tables Nos. 1 and 2.

There are three columns in these tables. The first column of numbers is that of the regression analysis estimates. The second column, titled "Administrative Adjustments," contains such modifications of the

regression study estimates as experience and belief lead the several deans and directors to express. The last column is left blank, to be filled in with the final decisional judgments on these estimates. One technical note: inasmuch as a total population of variables rather than a sampling was used in these regressions, no confidence limits were calculated.

[Insert Summary Tables Nos. 1 and 2 Here.]

Two Recommendations:

Believing that the university ought to capitalize upon this first extensive experience in formal estimation procedures for the budget, permit me to suggest two recommendations for what they are worth.

> (1) The curricular unity and organizational integrity of the university structure should be preserved and should dictate the budget's format for resource allocations and resource expenditures. This could be achieved by budgeting in terms of the seven schools and colleges only, viz., Arts, Business Administration, Education, Evening, Law, Nursing, and Sciences. These schools and colleges need to budget their curricula holistically for the total year, viz., summer, fall, intersession, and spring. Undergraduate and graduate courses should be accounted for within the schools and colleges taught.
>
> (2) All instructional and research units should be organized under the most closely related school and/or college and their budgeting become part of these basic units.

These two recommendations would go a long way toward an holistic curricular reflection within the budget at the school and college level of the university. One must admit that the current year's budgeting fragmentation of the curriculum by separate terms and other historical anomolies was most unfortunate. Ask the deans and directors about their plights.

SUMMARY TABLE NO. 1: FY 1973-1974 ESTIMATES ON STUDENT CREDIT HOURS

BUDGETED INSTRUCTIONAL AREA	REGRESSION STUDY ESTIMATE	ADMINISTRATIVE ADJUSTMENTS	FINAL DECISION ESTIMATE FOR FY 1973-74 BUDGET
1. Arts: UG	66,637	65,000	
2. Business Administration			
UG	9,536	-------	
MBA	2,179	-------	
3. Education: UG, G, PR	6,964	6,600	
4. Evening College: UG	14,480	-------	
5. Graduate Division	1,778	3,625	
6. IESP: NC*	-------	-------	
7. Intersession	2,343	-------	
8. Labor-Management School: NC*	-------	-------	
9. Law	22,078	17,174	
10. Nursing: UG	6,115	7,105	
11. Rehabilitation Workshop Administration: NC*	-------	-------	
12. Sciences: UG	19,527	20,000	
13. Summer Session			
UG	7,726	) 8,300	
GR	1,190	)	
TOTAL	160,153	156,342	

*Non Credit

SUMMARY TABLE NO. 2: FY 1973-1974 ESTIMATES OF ENROLLMENTS

BUDGETED INSTRUCTIONAL AREA		REGRESSION STUDY ESTIMATE	ADMINISTRATIVE ADJUSTMENTS	FINAL DECISION ESTIMATE FOR FY 1973-74 BUDGET
1. Arts: UG	FT	3607	3500	
	PT	305	----	
2. Business Administration	FT	1077	----	
	PT	356	----	
3. Education: UG, G, PR	FT	73	71	
	PT	533	506	
4. Evening College: UG	FT	457	----	
	PT	1398	----	
5. Graduate Division	FT	77	75	
	PT	703	650	
6. IESP: NC*		61	70	
7. Intersession	PT	826	----	
8. Labor Management School: NC*		272	----	
9. Law:	FT	1031	900	
	PT	751	554	
10. Nursing: UG	FT	810	900	
	PT	76	----	
11. Rehabilitation Workshop Administration: NC*		111	----	
12. Sciences: UG	FT	1302	1400	
	PT	98	----	
13. Summer Session	PT	2180	2100	
TOTAL	FT	8434	8416	
	PT	7226	6869	
	NC	444	453	
GRAND TOTAL		16104	15738	

*Non Credit

APPENDIX A

UNIVERSITY OF SAN FRANCISCO

OFFICE OF
INSTITUTIONAL STUDIES

MEMORANDUM NO. 9

To: The Reverend E. J. Smyth, S.J.
Acting President, and
The President's Council

Fr: James Steve Counelis, Director
Office of Institutional Studies

Date: October 18, 1972

Re: Commentary on Acting President Smyth's working document "Proposed Procedures for Budget Planning, 1973-1974."

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Permit me to put in writing a few comments on this excellent working document, for writing helps me to articulate the issues.

It is my position (and I believe the shared understanding of the President's Council) that all estimates of future enrollments in headcounts or credit hours are contingent at best. Given the known unreliability of our current management information (which will hopefully be improved over time), the estimates will be further biased. Nonetheless, a range of estimates will be provided so that a judgment could be rendered within some level of confidence. However, I underscore the point that the final decision for what particular estimates to be used in the budget's projection of instructionally based income rests ultimately with the President, he taking into consideration the commentary and advice received through the President's Council and the university's professional staff. In this regard, I believe the expressed and implied procedures outlined by Fr. Smyth in this memorandum are in accord with the better principles of university administration known today.

There is one other comment that I must make, that is, the absence of a set of "priorities" or "worths" or "utilities" or "values" or "criteria" against which the budgetary process of the university will judge the elements and totality of the finished product, called "University of San Francisco Budget, FY 1973-1974." The absence of these criterial watermarks in this procedural paper will inevitably become the rocks and shoals upon which university's needs, expectations, desires, morale, dignity, and integrity will

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be dashed. A university budget is a programmatic blueprint of resource allocations directed to some immediate and more remote goals. The principles of efficiency and effectiveness are empty processes in the absence of articulated priority-arranged programmatic ends.

APPENDIX B

BRIEF TECHNICAL NOTE

In the construction of the regression equations, the FY 1972-1973 Budget estimates were used for 1973 Intersession and Spring terms. If these terms turn out to be highly inflated, hence, the regression estimates will be inflated as well. Thus the utility of the Administrator adjustments is seen here.

CHART NO. 1: REGRESSION ESTIMATES OF STUDENT CREDIT HOURS BY BUDGETED INSTRUCTIONAL AREAS, FY 1973-1974

BUDGETED INSTRUCTIONAL AREAS/TERM	REGRESSION EQUATIONS	MEAN OF Y (SCH)	STANDARD ERROR OF ESTIMATE	RHO	COEFFICIENT OF DETER-MINATION	REGRESSION ESTIMATE OF Y^1 SCH+ (FY 1973-1974)
Arts: UG						
Fall	Y = 37195 - 755.6X	35683.8	1795.95	-.61	.37	33417
Spring	Y = 34810.4 - 318.1X	34174.2	1067.95	-.48	.23	33220*
Total						66637
Business Administration: UG						
Fall	Y = 2681.6 + 438.8X	3559.2	473.39	.86	.74	4875
Spring	Y = 2628.4 + 406.6X	3441.6	358.47	.90	.81	4661*
Sub Total						9536
MBA:						
Fall	Y = 1289.4 - 62.8X	1163.8	55.21	-.90	.81	975
Spring	Y = 1273 - 13.7X	1245.6	10.33	-.92	.85	1204*
Sub Total						2179
Total						11715

+Rounded to whole number

*FY 1972-1973 Budget estimate used

CHART NO. 1: CONTINUED

BUDGETED INSTRUCTIONAL AREAS/TERM	REGRESSION EQUATIONS	MEAN OF Y (SCH)	STANDARD ERROR OF ESTIMATE	RHO	COEFFICIENT OF DETER MINATION	REGRESSION ESTIMATE OF Y^1 SCH+ (FY 1973-1974)
Education:=						
Fall	Y = 3172.2 + 78.7X	3334.6	636.45	.22	.05	3571
Spring	Y = 2960.8 + 86.3X	3133.8	262.57	.52	.26	3393*
Total						6964
Evening College: UG						
Summer	Y = 6068.4 - 906.8X	4254.8	756.33	-.91	.83	1534
Fall	Y = 12724.8 - 1351.2X	10022.4	1158.15	-.91	.82	5969
Spring	Y = 12335.4 - 1071.6X	10192.2	1185.72	-.86	.73	6977*
Total						14480
Graduate Division:x						
Fall	Y = 972.8 - 21.5X	929.8	91.82	-.39	.15	865
Spring	Y = 1055 - 28.5X	1112.0	112.67	-.42	.18	913*
Total						1778
Intersession:	Y = 946.8 + 279.2X	1505.2	293.23	.87	.75	2343*

+Rounded to whole number
=Does not include Graduate SCH in Education: See Graduate Division

*FY 1972-1973 Budget estimate used
xIncludes Arts, Sciences, and Education

CHART NO. 1: CONTINUED

BUDGETED INSTRUCTIONAL AREAS/TERM	REGRESSION EQUATIONS	MEAN OF Y (SCH)	STANDARD ERROR OF ESTIMATE	RHO	COEFFICIENT OF DETER-MINATION	REGRESSION ESTIMATE OF Y^1 SCH+ (FY 1973-1974)
Law:						
Summer	Y = -249.6 + 371.7X	493.8	544.52	.78	.61	1609
Fall	Y = 3526.6 + 1521.4X	6569.4	652.74	.97	.95	11134
Spring	Y = 3646 + 1137.8X	5921.6	668.27	.95	.91	9335*
Total						22078
Nursing:						
Fall	Y = 2279.8 + 190.7X	2661.2	121.69	.94	.89	3233
Spring	Y = 2266 + 123.1X	2512.2	93.41	.92	.85	2882*
Total						6115
Sciences: UG						
Fall	Y = 7133.4 + 694.6X	8522.6	519.77	.93	.86	10606
Spring	Y = 6873.8 + 449.4X	7772.6	239.73	.96	.92	8921*
Total						19527
Summer Session:						
UG	Y = 8138.8 - 82.6X	7973.6	509.71	-.28	.08	7726
GR	Y = 1566.8 - 75.3X	1416.2	219.03	-.53	.28	1190
Total						8916

+Rounded to whole number

*FY 1972-1973 Budget estimate used

CHART NO. 2: REGRESSION STUDY DATA AND ESTIMATES: COMPARISON OF ACTUAL STUDENT CREDIT HOURS TO REGRESSION ESTIMATES BY BUDGETED INSTRUCTIONAL AREAS, FY 1968-1974

BUDGETED INSTRUCTIONAL AREAS/TERM	ACTUAL STUDENT CREDIT HOURS				FY 1972-73 BUDGET SCH ESTIMATE	FY 1973-74 SCH ESTIMATIONS		
	1968-69	1969-70	1970-71	1971-72		REGRESSION STUDY+	ADMINISTRATIVE ADJUST.	FINAL ADJUSTED ESTIMATE
Arts: UG								
Fall	36088	36142	38030	35556	32603#	33417		
Spring	34165	34511	35755	33220	33220	33220		
Total	70253	70653	73785	68776	65823	66637	65000	
Business Administration: UG								
Fall	3148	2849	3049	3967	4783#	4875		
Spring	2866	2559	3545	4119	4119	4661		
Total	6014	5408	6594	8086	8902	9536		
MBA:								
Fall	1280	1287	1107	1071	1074#	975		
Spring	1276	1251	1257	1222	1222	1204		
Total	2556	2538	2364	2293	2296	2179		
Total	8570	7946	8958	10379	11198	11715		

+Rounded to whole number

#Actual SCH used

CHART NO. 2: CONTINUED

BUDGETED INSTRUCTIONAL AREAS/TERM	ACTUAL STUDENT CREDIT HOURS 1968-69	1969-70	1970-71	1971-72	FY 1972-73 BUDGET SCH ESTIMATE	FY 1973-74 SCH ESTIMATIONS REGRESSION STUDY+	ADMINISTRATIVE ADJUSTED	FINAL ADJUSTED ESTIMATE
Education:=								
Fall	2533	3746	3734	3721	2939#	3571	See Note 2	
Spring	2692	3245	3402	3164	3166	3393		
Total	5225	6991	7136	6885	6103	6964	6600	
Evening College: UG								
Summer	6538	4326	4854	2778	2778#	1534		
Fall	11462	12734	10554	8578	6784#	5969		
Spring	11281	12517	10921	8121	8121	6977		
Total	29283	29577	26329	19477	17684	14480		
Graduate Division:x								
Fall	950	902	1004	999	794	865	See Note 3	
Spring	950	1142	1250	1109	1109	913		
Total	1900	2044	2254	2108	1903	1778	3625	
Intersession:	701	1293	1874	1829	1829	2343		

+Rounded to whole number

=Does not include Graduate SCH in Education: See Graduate Division

#Actual SCH used

xIncludes Arts, Sciences, and Education

CHART NO. 2: CONTINUED

BUDGETED INSTRUCTIONAL AREAS/TERM	ACTUAL STUDENT CREDIT HOURS				FY 1972-73 BUDGET SCH ESTIMATE	FY 1973-74 SCH ESTIMATIONS		
	1968-69	1969-70	1970-71	1971-72		REGRESSION STUDY+	ADMINISTRATIVE ADJUST.	FINAL ADJUSTED ESTIMATE
Law:								
Summer	87	99	123	330	610#	1609	195	
Fall	4215	4442	6224	7846	10120#	11134	8575	
Spring	3936	4048	6092	7766	7766	9335	8404	
Total	8238	8589	12439	15942	18496	22078	17174	
Nursing:								
Fall	2334	2356	2779	2743	3094#	3233		
Spring	2256	2312	2623	2685	2685	2882		
Total	4590	4668	5402	5428	5779	6115	7105	
Sciences: UG								
Fall	7517	7808	7864	9060	10364#	10606		
Spring	6960	7224	7587	8546	8546	8921		
Total	14477	15032	15451	17606	18910	19527	20000	
Summer Session:								
UG	7828	8061	8343	8381	7255	7726		
GR	1434	1594	1396	1605	1052	1190		
Total	9262	9655	9739	9986	8307	8916	8300	

+Rounded to whole number

#Actual SCH used

CHART NO. 2: CONTINUED

BUDGETED INSTRUCTIONAL AREAS/TERM	ACTUAL STUDENT CREDIT HOURS				FY 1972-73 BUDGET SCH ESTIMATE	FY 1973-74 SCH ESTIMATIONS		
	1968-69	1969-70	1970-71	1971-72		REGRESSION STUDY+	ADMINISTRA-TIVE ADJUST.	FINAL ADJUS-TED ESTIMATE
Grand Total:	152499	156488	163367	158416	156032	160553	156342	

+Rounded to whole number

CHART NO. 3: REGRESSION ESTIMATES OF STUDENT NON-CREDIT CURRICULAR ENROLLMENTS BY BUDGETED INSTRUCTIONAL AREAS, FY 1973-1974

BUDGETED INSTRUCTIONAL AREAS TERM	REGRESSION EQUATIONS	MEAN OF Y (STUDENTS)	STANDARD ERROR OF ESTIMATE	RHO	COEFFICIENT OF DETERMINATION	REGRESSION ESTIMATE OF Y^1 (STUDENTS)+ (FY 1973-1974)
Labor Management School:						
Fall	$Y = 161.6 - 4.6X$	152.4	26.24	-.31	.09	139
Spring	$Y = 196.4 - 12.5X$	171.4	16.01	-.82	.67	133
Total						272
Rehabilitation Workshop Administration:						
Fall	$Y = 9 + 9X$	27.0	9.49	.87	.75	54
Spring	$Y = 12.4 + 9X$	12.4	5.57	.95	.90	57
Total						111
IESP: English for Foreign Students:						
Fall	$Y = 63.6 - 7.2X$	49.2	10.01	-.80	.64	28
Spring	$Y = 31.6 + .3X$	32.2	2.82	.19	.04	33
Total						61

+Rounded to whole number

CHART NO. 4: REGRESSION STUDY DATA AND ESTIMATES: COMPARISON OF ACTUAL NON-CREDIT ENROLLMENTS TO REGRESSION ESTIMATES BY BUDGETED INSTRUCTIONAL AREAS, FY 1968-1974

BUDGETED INSTRUCTIONAL AREAS/TERM	ACTUAL ENROLLMENTS				FY 1972-73 BUDGET ESTIMATE	FY 1973-74 ENROLLMENT ESTIMATE		
	1968-69	1969-70	1970-71	1971-72		REGRESSION STUDY+	ADMINISTRATIVE ADJUST.	FINAL ADJUSTED ESTIMATE
Labor Management School:								
Fall	136	179	178	133	136#	139	See Note 3	
Spring	192	203	154	154	154	133		
Total	328	382	332	287	290	272		
Rehabilitation Workshop Administration:								
Fall	15	15	15	45	45#	54		
Spring	15	15	32	45	45	57		
Total	30	30	47	90	90	111		
IESP: English for Foreign Students:								
Fall	71	56	36	40	43#	28	35	
Spring	32	29	36	32	32	33	35	
Total	103	85	70	72	75	61	70	

+Rounded to whole number

#Actual enrollments

CHART NO. 5: REGRESSION ESTIMATES OF STUDENT ENROLLMENTS BY BUDGETED INSTRUCTIONAL AREAS, FY 1973-1974

BUDGETED INSTRUCTIONAL AREAS/TERMS		REGRESSION EQUATIONS	MEAN OF Y (STUDENTS)	STANDARD ERROR OF ESTIMATE	RHO	COEFFICIENT OF DETER-MINATION	REGRESSION ESTIMATE OF Y^1 (STUDENTS)+ (FY 1973-1974)
Arts: UG							
Fall	FT	Y = 1952.6 - 19.6X	1913.4	119.62	-.29	.08	1855
	PT	Y = 212 - 12.1X	186.2	44.10	-.47	.22	147*
Spring	FT	Y = 1807.4 - 11X	1785.4	50.85	-.37	.14	1752*
	PT	Y = 213.4 - 11X	191.4	67.62	-.29	.08	158*
Total	FT						3607
	PT						305
Business Administration: UG							
Fall	FT	Y = 403 + 34X	471.0	31.01	.90	.80	573
	PT	Y = 33 - 5.1X	22.8	6.02	-.84	.71	7*
Spring	FT	Y = 365.2 + 36X	435.8	36.71	.88	.77	540*
	PT	Y = 37 - 3.8X	29.4	5.74	-.77	.59	18*
Sub Total	FT						1113
	PT						25
Business Administration: MBA							
Fall	PT	Y = 256.8 - 18.1X	220.6	12.77	-.93	.87	166*
Spring	PT	Y = 260 - 19X	222.0	8.45	-.97	.94	165
Sub Total	PT						331

+Rounded to whole number

*FY 1972-1973 Budget estimates used

CHART NO. 5: CONTINUED

BUDGETED INSTRUCTIONAL AREAS/TERMS		REGRESSION EQUATIONS	MEAN OF Y (STUDENTS)	STANDARD ERROR OF ESTIMATE	RHO	COEFFICIENT OF DETER-MINATION	REGRESSION ESTIMATE OF Y' (STUDENTS)+ (FY 1973-1974)
Business Administration: UG and MBA							
Total	FT	----------	------	------	----	---	1113
	PT	----------	------	------	----	---	356
Education:=							
Fall	FT	Y = 88 - 9.8X	68.4	29.15	-.52	.27	39
	PT	Y = 334.4 - 29.4X	275.6	59.27	-.67	.45	187
Spring	FT	Y = 116.2 - 16.4X	83.4	44.74	-.56	.31	34*
	PT	Y = 246.8 + 19.8X	286.4	84.59	.39	.15	346*
Total	FT	----------	------	------	----	---	73
	PT	----------	------	------	----	---	533
Evening College: UG							
Summer	PT	Y = 1456 - 211.7X	1032.6	93.67	-.97	.94	397
Fall	FT	Y = 535.2 - 65X	405.2	48.44	-.93	.86	210
	PT	Y = 1365 - 180.7X	1003.6	251.66	-.80	.63	461
Spring	FT	Y = 472.4 - 45.1X	382.2	43.42	-.88	.78	247*
	PT	Y = 1160.2 - 123.9X	912.4	231.09	-.70	.49	540*
Total	FT	----------	------	------	----	----	457
	PT	----------	------	------	----	----	1398

=Does not include MA and MAT students in Education. See Graduate Division.

*FY 1972-1973 Budget estimates used

+Rounded to whole number

CHART NO. 5: CONTINUED

BUDGETED INSTRUCTIONAL AREAS/TERMS		REGRESSION EQUATIONS	MEAN OF Y (STUDENTS)	STANDARD ERROR OF ESTIMATE	RHO	COEFFICIENT OF DETER-MINATION	REGRESSION ESTIMATE OF Y^1 (STUDENTS)+ (FY 1973-1974)
Graduate Division:							
Fall	FT	Y = 57 - 1.3X	54.4	18.37	-.13	.02	50
	PT	Y = 199.4 + 30.3X	260.0	27.38	.90	.80	351
Spring	FT	Y = 39.6 - 2.6X	34.4	9.65	-.44	.19	27*
	PT	Y = 267.6 + 16.7X	301.0	34.63	.66	.44	352*
Total	FT	----------	------	-------	----	---	77
	PT	----------	------	-------	----	---	703
Intersession:	UG						
	PT	Y = 421.4 + 80.9X	583.2	97.27	.84	.70	826*
Law:							
Summer	PT	Y = -4.8 - 45.5X	86.2	42.35	.89	.79	223
Fall	FT	Y = 173.6 + 70.1X	327.8	68.75	.89	.79	525
	PT	Y - 129.8 + 30.7X	191.2	11.57	.98	.96	284
Spring	FT	Y = 177.8 + 65.5X	308.8	42.21	.94	.89	506*
	PT	Y = 114.4 + 24X	162.4	17.81	.93	.86	234*
Total	FT	----------	------	-------	----	---	1031
	PT	----------	------	-------	----	---	1055
Nursing:	UG						
Fall	FT	Y = 327 + 20.5X	368.0	6.36	.99	.97	430
	PT	Y = 16.2 + 1.9X	20.0	2.70	.79	.62	26

+Rounded to whole number

*FY 1972-1973 Budget estimates used

CHART NO. 5: CONTINUED

BUDGETED INSTRUCTIONAL AREAS/TERMS		REGRESSION EQUATION	MEAN OF Y (STUDENTS)	STANDARD ERROR OF ESTIMATE	RHO	COEFFICIENT OF DETER-MINATION	REGRESSION ESTIMATE OF Y[1] (STUDENTS)[4] (FY 1973-1974)
Nursing: UG							
Spring	FT	Y = 323.2 + 11.3X	345.8	5.16	.97	.94	380*
	PT	Y = 18.8 + 6.1X	31.0	5.53	.90	.80	50*
Total	FT						810
	PT						76
Sciences: UG							
Fall	FT	Y = 554.6 + 26.7X	608.0	24.41	.89	.80	689
	PT	Y = 44.4 - .4X	43.6	23.94	-.03	.00	42
Spring	FT	Y = 493.6 + 23.7X	541.0	15.80	.94	.88	613*
	PT	Y = 51.2 + X	53.2	7.68	.23	.05	56*
Total	FT						1302
	PT						98
Summer Session:							
GR	PT	Y = 516.4 + 7.3X	531.0	112.08	.12	.01	553
UG	PT	Y = 1669.6 - 8.6X	1652.4	35.62	-.40	.16	1627
Total							2180

+Rounded to whole number

*FY 1972-1973 Budget estimates used

CHART NO. 6: REGRESSION STUDY DATA AND ESTIMATES: COMPARISON OF ACTUAL STUDENT ENROLLMENTS TO REGRESSION ESTIMATES BY BUDGET INSTRUCTIONAL AREAS, FY 1968-1974

BUDGETED INSTRUCTIONAL AREAS/TERMS		ACTUAL ENROLLMENTS 1968-69	1969-70	1970-71	1971-72	FY 1972-73 BUDGET STUDENT ESTIMATE	FY 1973-74 STUDENT ESTIMATES REGRESSION STUDY+	ADMINISTRATIVE ADJUS	FINAL ADJUSTED ESTIMATE
Arts: UG									
Fall	FT	1860	1946	2058	1936	1767#	1855		
	PT	173	215	230	194	119#	147		
Spring	FT	1767	1814	1854	1746	1746	1752		
	PT	216	143	288	155	155	158		
Total	FT	3627	3760	3912	3682	3513	3607	3500	
	PT	389	358	518	349	274	305	305	
Business Administration: UG									
Fall	FT	435	402	466	492	560#	573		
	PT	35	25	27	10	17#	7		
Spring	FT	395	359	417	504	504	504		
	PT	33	35	37	21	21	18		
Sub Total	FT	830	761	883	996	1064	1077		
	PT	68	60	64	31	38	25		
Business Administration: MBA									
Fall	PT	251	249	210	216	177#	166		
Spring	PT	259	245	224	191	191	165		
Sub Total	PT	510	494	434	407	368	331		
Total	FT	830	761	883	996	1064	1077		
	PT	578	554	498	438	406	356		

+Rounded to whole number

#Actual enrollments

CHART NO. 6: CONTINUED

BUDGETED INSTRUCTIONAL AREAS/TERMS		ACTUAL ENROLLMENTS 1968-69	1969-70	1970-71	1971-72	FY 1972-73 BUDGET STUDENT ESTIMATE	FY 1973-74 STUDENT ESTIMATES REGRESSION STUDY+	ADMINISTRATIVE ADJUS.	FINAL ADJUSTED ESTIMATE
Education:=									
Fall	FT	82	80	57	100	23#	39		
	PT	270	367	306	257	178#	187		
Spring	FT	84	164	57	56	56	34		
	PT	319	226	179	354	354	346		
Total	FT	166	244	114	156	79	73		
	PT	589	593	485	611	532	533		
Evening College:	UG								
Summer	PT	1453	1299	1019	696	696#	397		
Fall	FT	537	513	353	309	314#	210		
	PT	1115	1379	1265	716	543#	461		
Spring	FT	513	373	393	316	316	247		
	PT	1009	1363	762	714	714	540		
Total	FT	1050	886	746	625	630	457		
	PT	3577	4041	3046	2126	1953	1398		
Graduate Division: x									
Fall	FT	51	76	32	61	52#	50		
	PT	218	191	275	302	314#	351		
Spring	FT	50	25	31	33	33	27		
	PT	254	324	261	333	333	352		
Total	FT	101	101	63	94	85	77	75	
	PT	472	515	536	635	647	703	650	

=Does not include Graduate Students in Education: See Graduate Division

xIncludes all Master's degree programs in Arts, Sciences, and Education, except MBA

#Actual enrollments

+Rounded to whole number

CHART NO. 6: CONTINUED

BUDGETED INSTRUCTIONAL AREAS/TERMS		ACTUAL ENROLLMENTS 1968-69	1969-70	1970-71	1971-72	FY 1972-73 BUDGET STUDENT ESTIMATE	FY 1973-74 STUDENT ESTIMATES REGRESSION STUDY+	ADMINISTRATIVE ADJUS.	FINAL ADJUSTED ESTIMATE
Intersession:	PT	329	549	694	672	672	826		
Law:									
Summer	PT	29	33	41	110	218#	233	65	
Fall	FT	210	208	296	433	492#	525	458	
	PT	129	153	208	214	252#	284	254	
Spring	FT	204	197	303	420	420	506	442	
	PT	108	129	185	195	195	234	235	
Total	FT	414	405	599	853	912	1031	900	
	PT	266	315	434	519	665	751	554	
Nursing:									
Fall	FT	333	344	363	385	415#	430	475	
	PT	18	16	21	19	26#	26	26	
Spring	FT	324	331	346	364	364	380	425	
	PT	18	29	24	42	42	50	50	
Total	FT	657	675	709	749	779	810	900	
	PT	36	45	45	61	68	76	76	
Sciences: UG									
Fall	FT	549	609	585	620	677#	689		
	PT	36	31	78	47	26#	42		
Spring	FT	504	504	531	583	583	613		
	PT	43	60	59	52	52	56		
Total	FT	1053	1113	1116	1203	1260	1302	1400	
	PT	79	91	137	99	78	98	98	

+Rounded to whole number

#Actual enrollments

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CHART NO. 6: CONTINUED

BUDGETED INSTRUCTIONAL AREAS/TERMS		ACTUAL ENROLLMENTS 1968-69	1969-70	1970-71	1971-72	FY 1972-73 BUDGET STUDENT ESTIMATE	FY 1973-74 STUDENT ESTIMATES REGRESSION STUDY+	ADMINISTRA-TIVE ADJUS.	FINAL ADJUS-TED ESTIMATE
Summer Session:									
GR	PT	499	489	541	692	434#	553		
UG	PT	1684	1656	1655	1596	1671#	1627		
Total	PT	2183	2145	2196	2288	2105	2180	2100	
Grand Total	FT	7898	7945	8142	8358	8322	8434		
	PT	8498	9206	8589	7798	7400	7226		
		16396	17151	16731	16156	15722	15660		

+Rounded to whole number

#Actual enrollments

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CHART NOTES

Note 1:

Dr. Edward J. Griffin, Dean of the School of Education, stated that because of the unnatural division of education courses among the Graduate Division, Summer Session, Intersession, and the School of Education, he wished to note that the estimate of 6,600 units includes undergraduate, graduate, and professional courses (100 - 300 course levels) for the Fall and Spring Semesters only, even though he provides the personnel for all academic terms of the year.

Note 2:

The Reverend John H. Martin, S.J., Dean of the Graduate Division notes that many graduate students take upper division courses as part of their programs, and, indeed there are in the M.A. in education and the M.A.T. programs a goodly number of required upper division courses. Inasmuch as the 1,778 student credit hour estimate was built upon 200 - 300 level courses, Fr. Martin placed 3,625 units in the Administrative Adjustment column to account for all levels of courses taken by graduate students.

Note 3:

The Reverend Andrew C. Boss, S.J., Director of the Labor-Management School indicated that the nature of the enrollment patterns is quite difficult to predict. There are a goodly number of variables over which he has little control. Fr. Boss stated that he could not accept or reject the estimated FY 1973-1974 enrollment at 272 students because for him such a result was without meaning. He also noted that in his file of non-salary budget worksheets are contained several live possibilities of funds and students that would certainly invalidate the estimated 272 students were they to materialize.

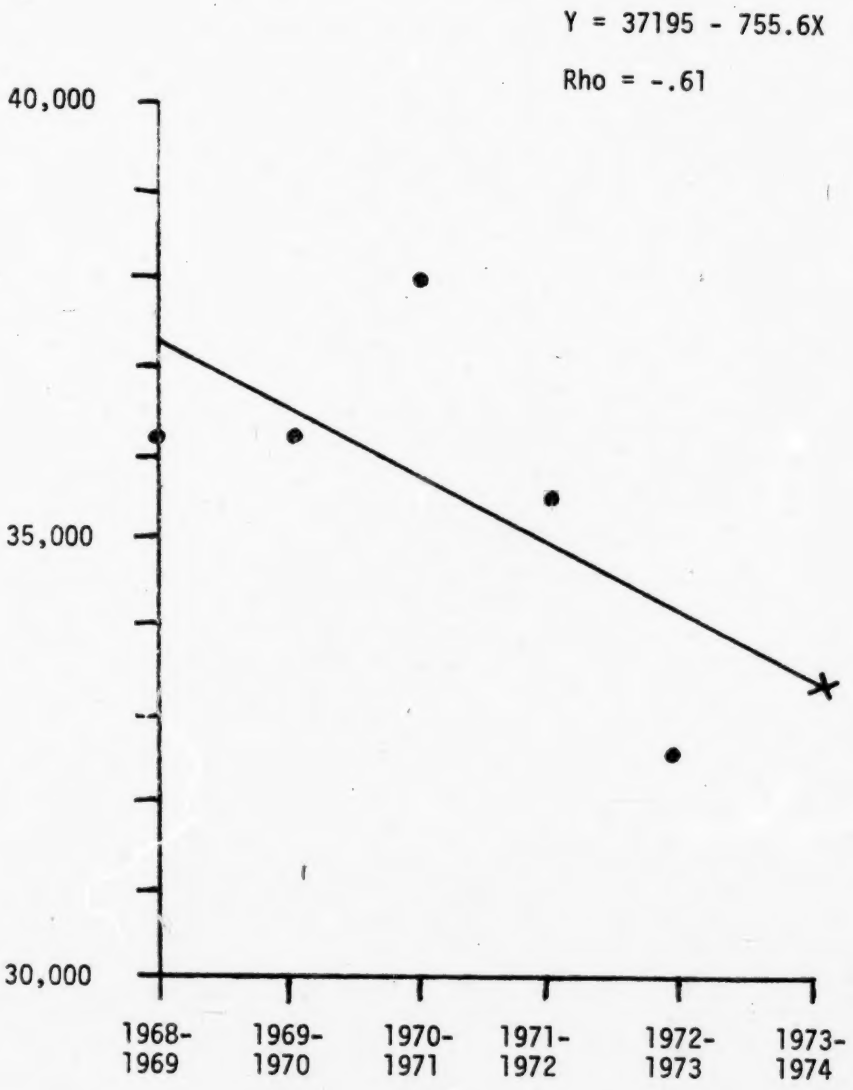
APPENDIX C

BRIEF TECHNICAL NOTE

In the reading of the graphs, please note that the vertical scale on all the graphs are not identical. This would have been impossible for the size of sheet, 8 1/2" by 11", upon which these graphs were constructed. However, the time scale, which is the horizontal line, is uniform for all graphs.

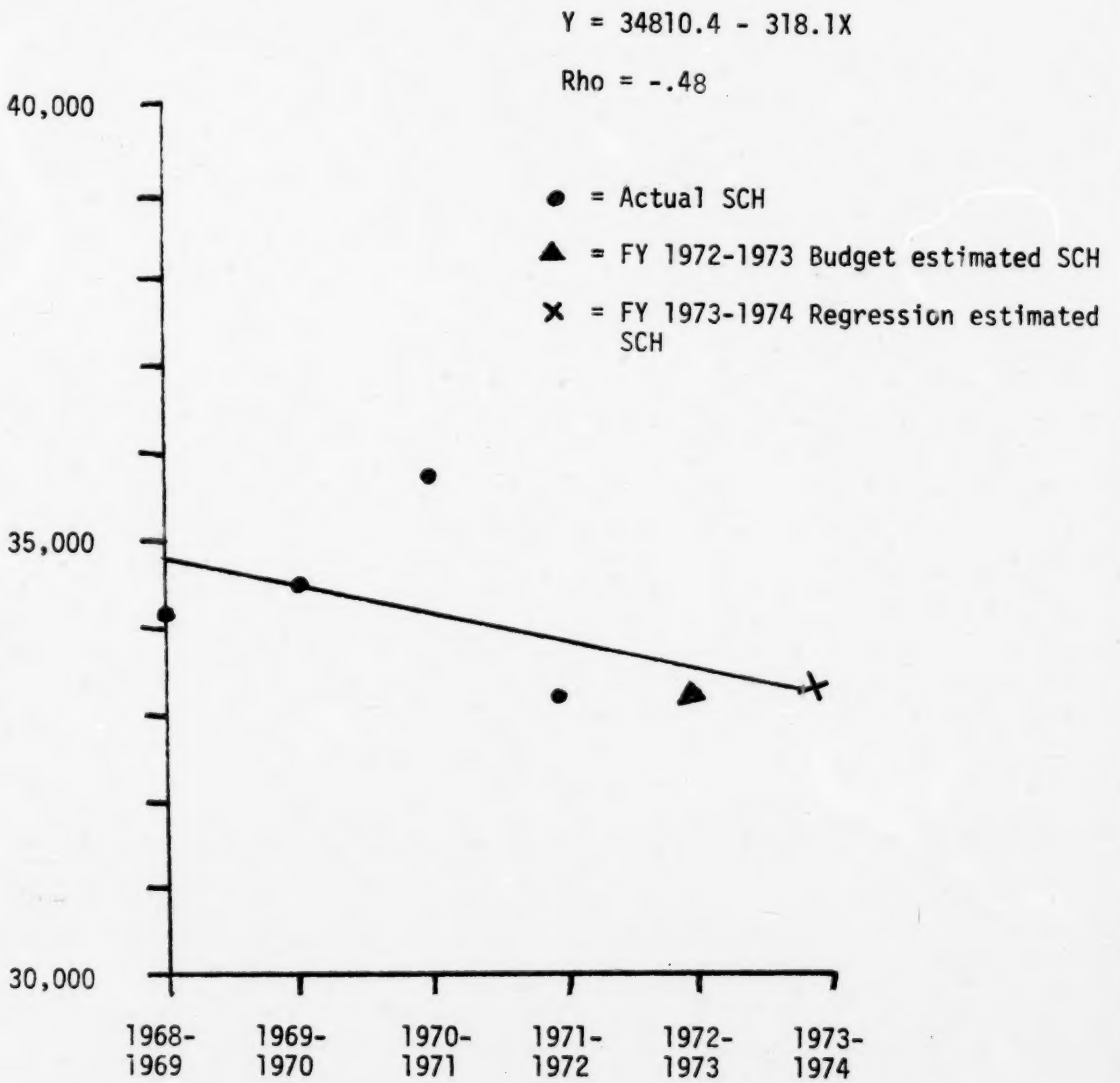
GRAPH NO. 1: BUDGETED INSTRUCTIONAL AREA--ARTS, UNDERGRADUATE LEVEL

STUDENT CREDIT HOURS--FALLS, 1968-1974



GRAPH NO. 2: BUDGETED INSTRUCTIONAL AREA--ARTS, UNDERGRADUATE LEVEL

STUDENT CREDIT HOURS--SPRINGS, 1968-1974



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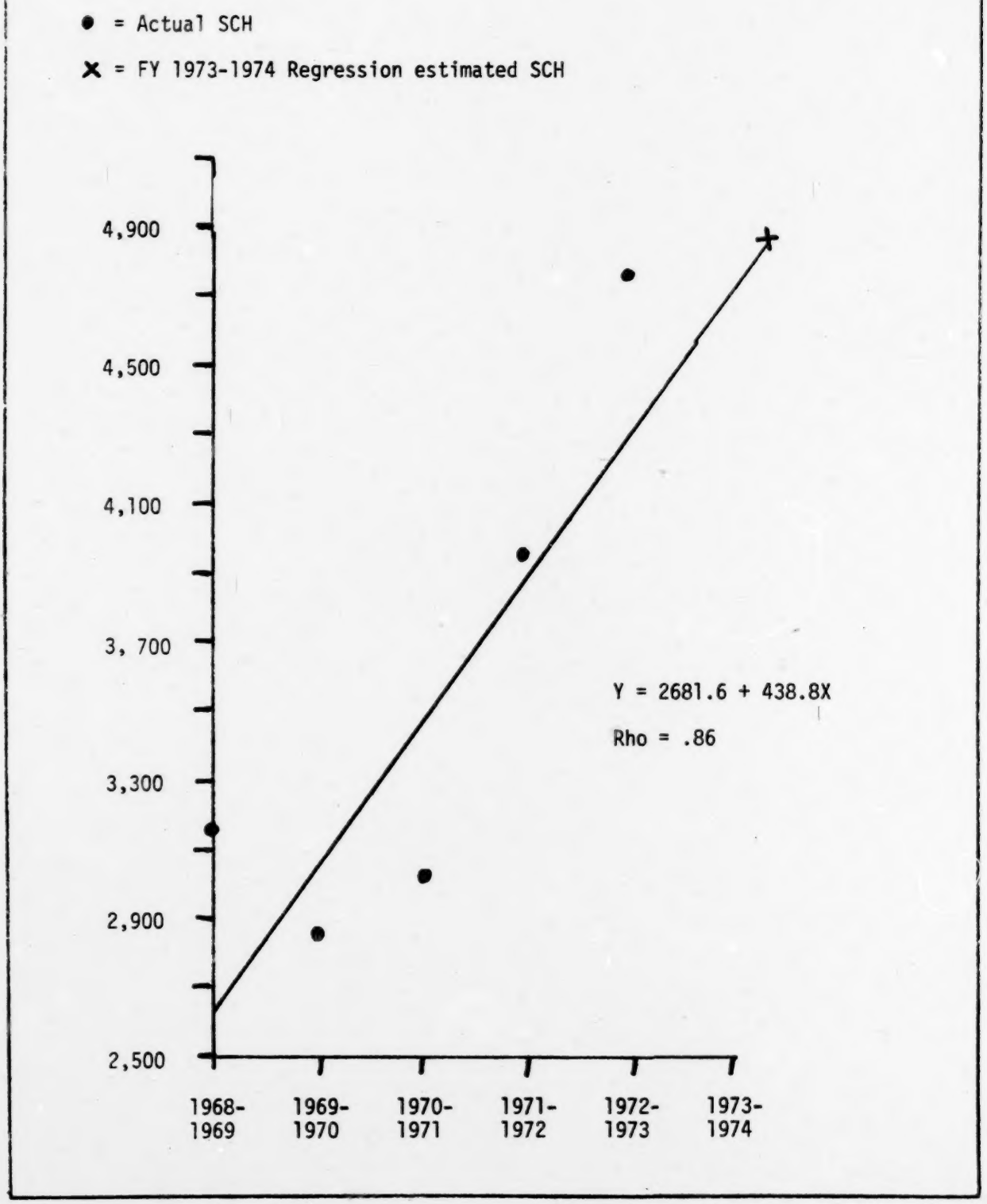
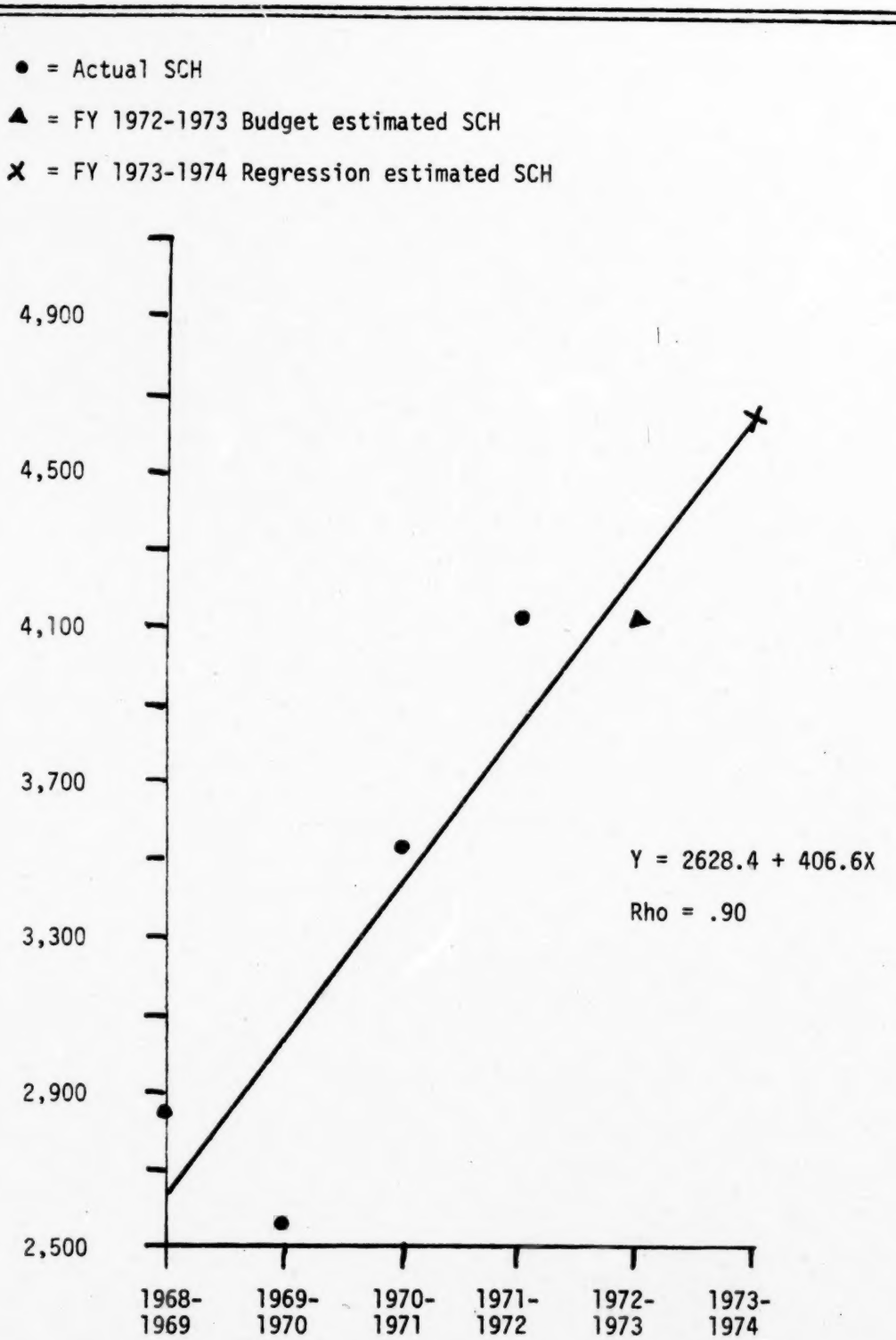
GRAPH NO. 3: BUDGETED INSTRUCTIONAL AREA IN BUSINESS ADMINISTRATION, UNDERGRADUATE LEVEL STUDENT CREDIT HOURS--FALLS, 1968-1974



GRAPH NO. 4: BUDGETED INSTRUCTIONAL AREA--BUSINESS ADMINISTRATION, UNDERGRADUATE LEVEL STUDENT CREDIT HOURS--SPRINGS, 1968-1974



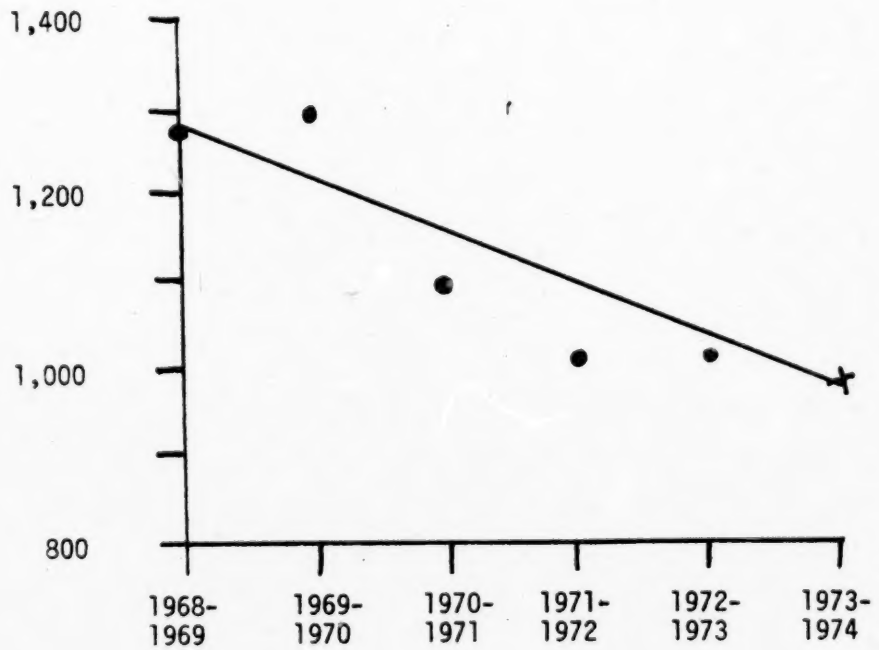
GRAPH NO. 5: BUDGETED INSTRUCTIONAL AREA--BUSINESS ADMINISTRATION, MBA PROGRAM--FALLS, 1968-1974

● = Actual SCH

✕ = FY 1973-1974 Regression estimated SCH

Y = 1289.4 - 62.8X

Rho = -.90



GRAPH NO. 6: BUDGETED INSTRUCTIONAL AREA--BUSINESS ADMINISTRATION, MBA PROGRAM--SPRINGS, 1968-1974

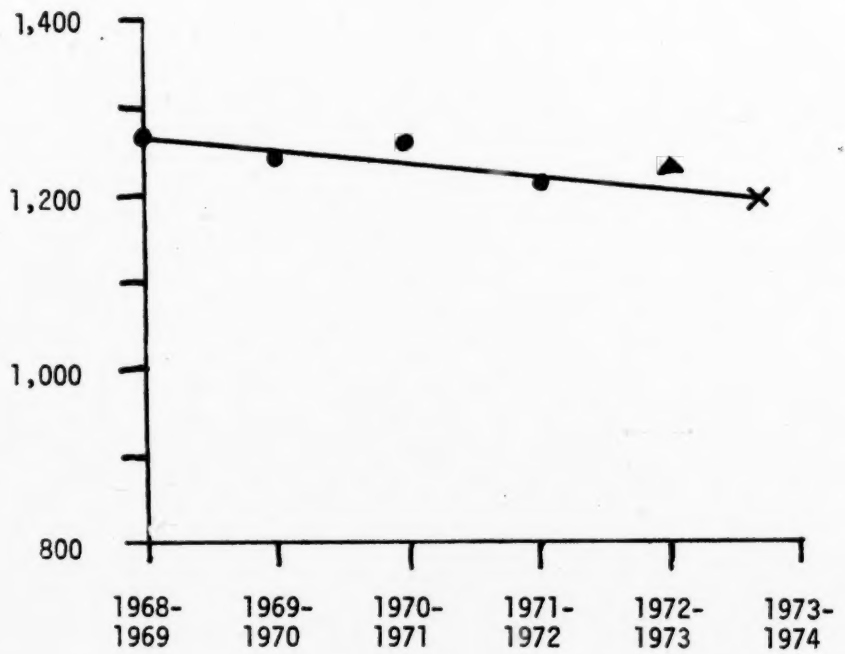
● = Actual SCH

▲ = FY 1972-1973 Budget estimated SCH

✕ = FY 1973-1974 Regression estimated SCH

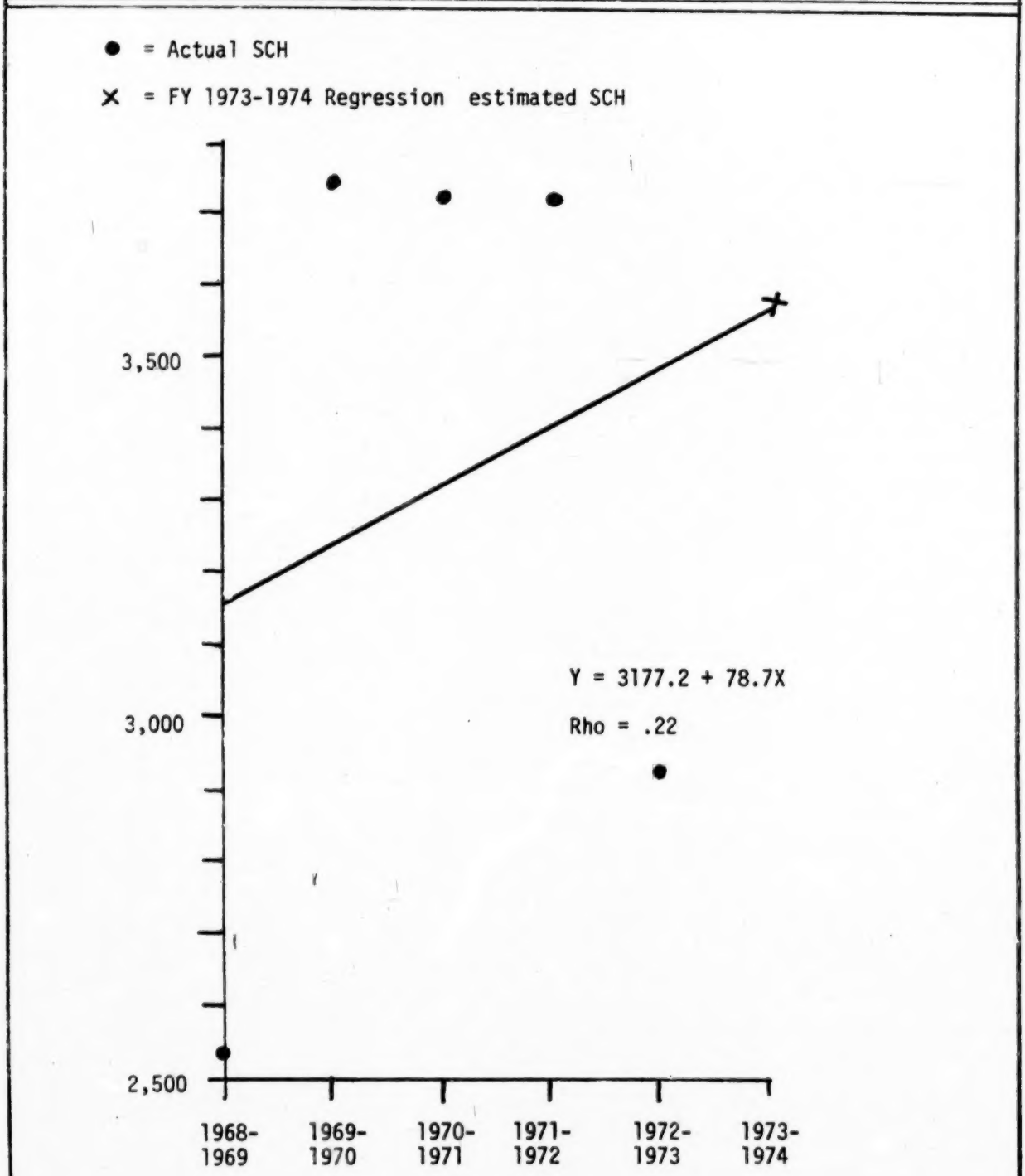
Y = 1273 - 13.7X

Rho = -.92



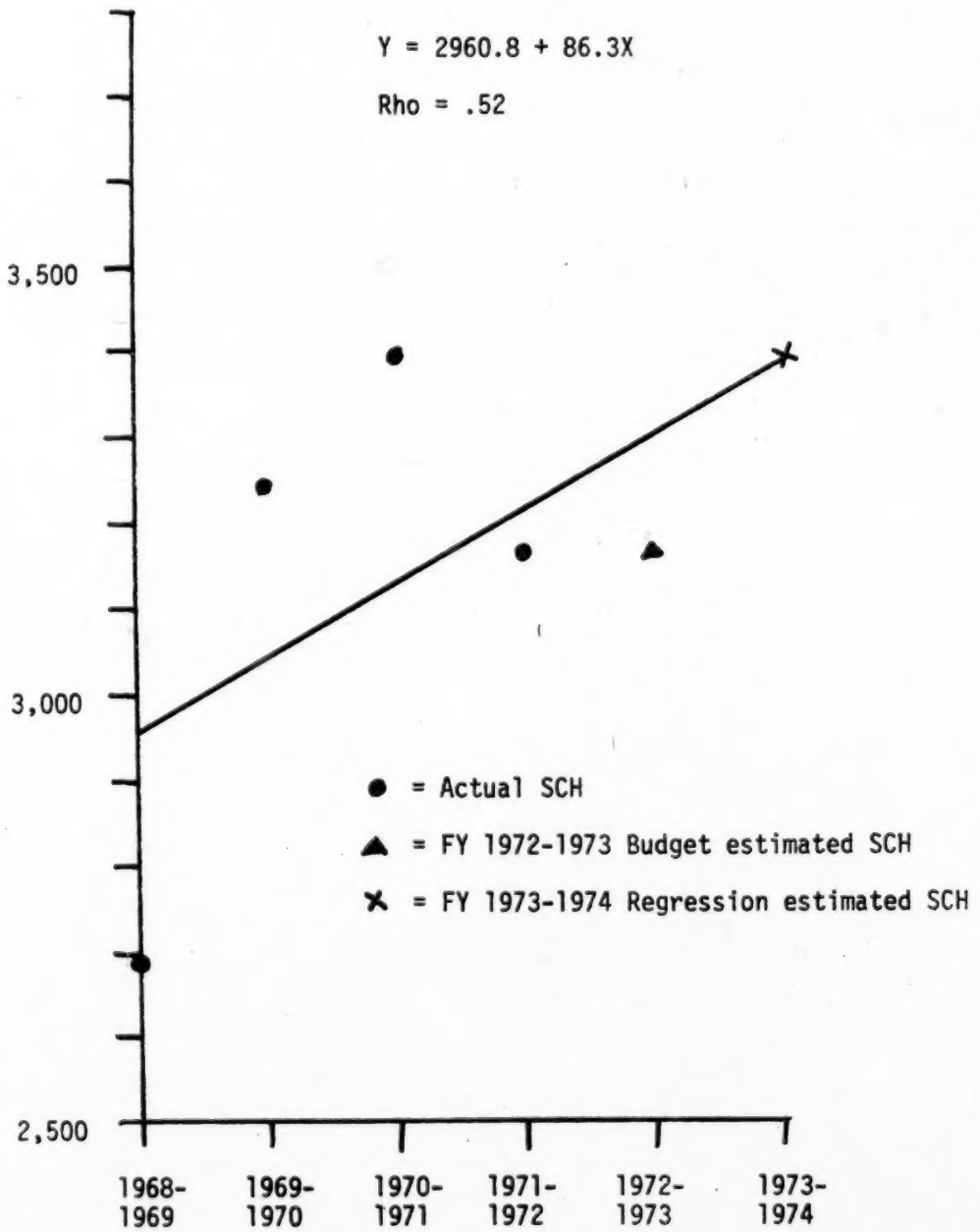
GRAPH NO. 7: BUDGETED INSTRUCTIONAL AREA--EDUCATION,

PROFESSIONAL PROGRAM STUDENT CREDIT HOURS--FALLS, 1968-1974



GRAPH NO. 8: BUDGETED INSTRUCTIONAL AREA--EDUCATION, PROFESSIONAL PROGRAM

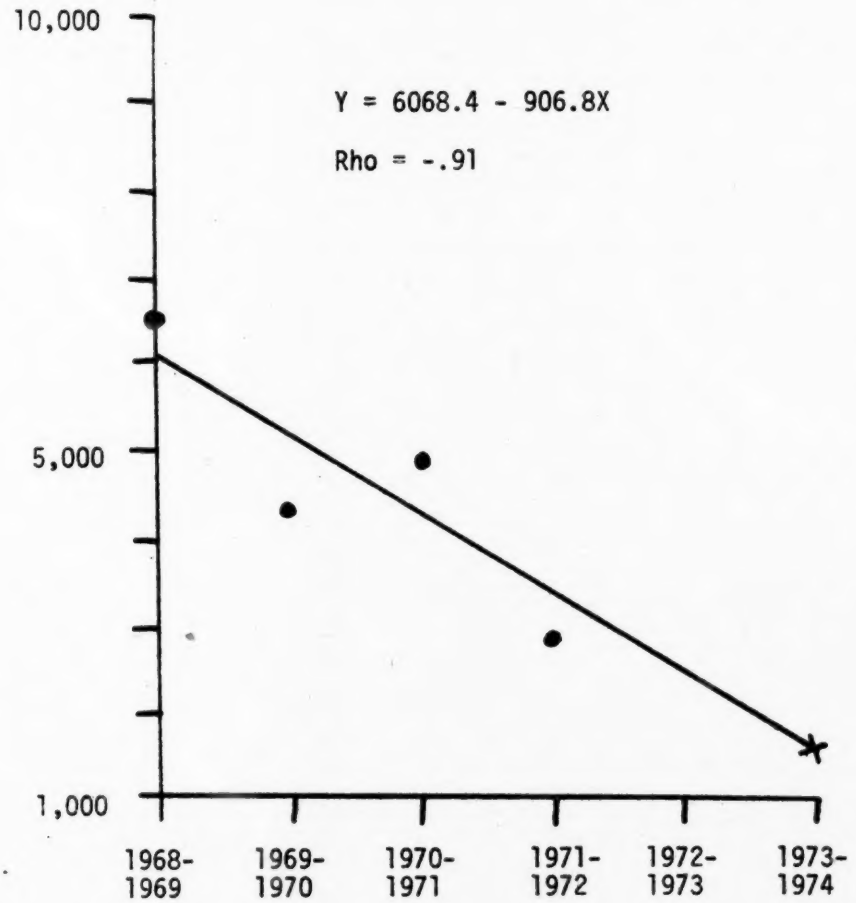
STUDENT CREDIT HOURS--SPRINGS, 1968-1974



GRAPH NO. 9: BUDGETED INSTRUCTIONAL AREA--EVENING COLLEGE, UNDERGRADUATE STUDENT CREDIT HOURS--SUMMERS, 1968-1974

● = Actual SCH

✕ = FY 1973-1974 Regression estimated SCH

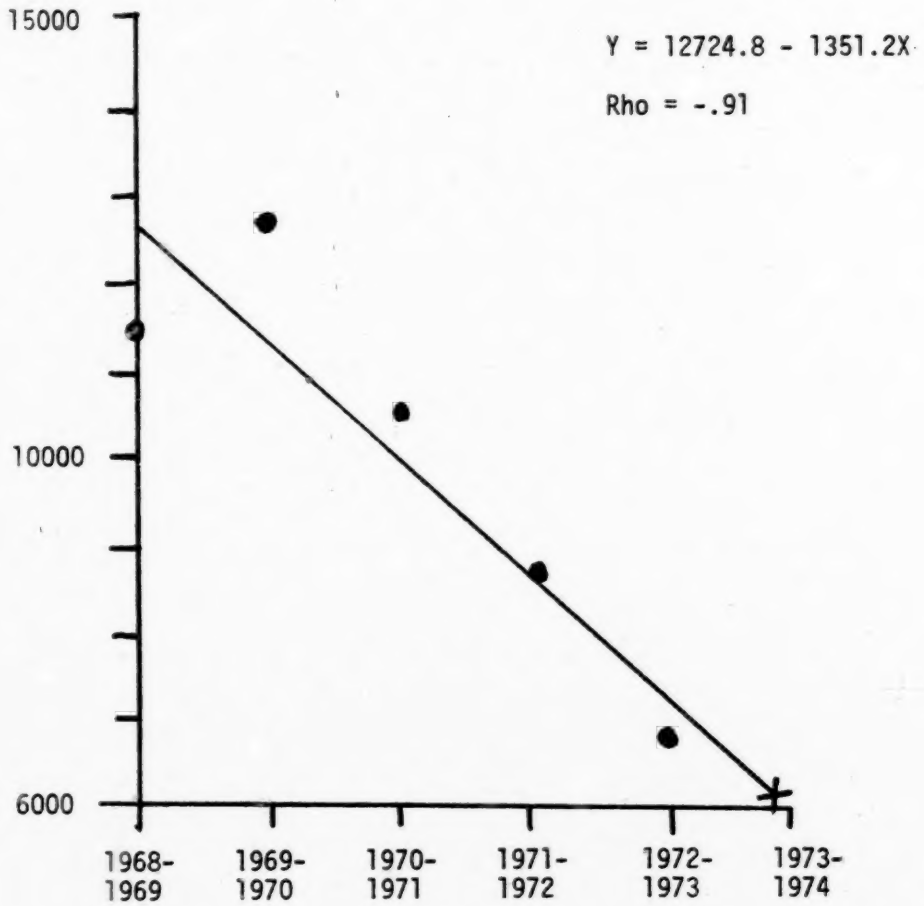


GRAPH NO. 10: BUDGETED INSTRUCTIONAL AREA--EVENING COLLEGE

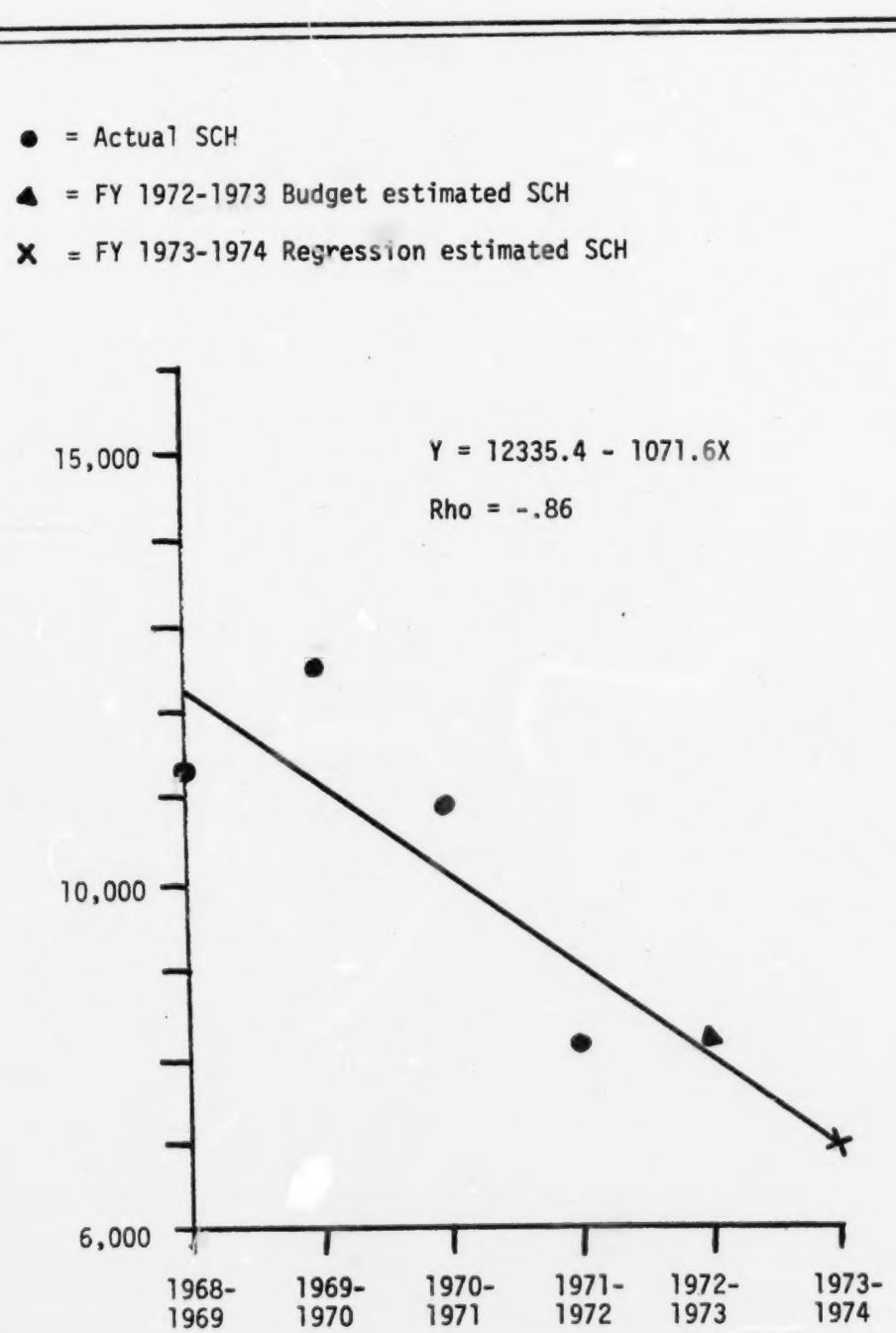
UNDERGRADUATE STUDENT CREDIT HOURS--FALLS, 1968-1974

● = Actual SCH

X = FY 1973-1974 Regression estimated SCH



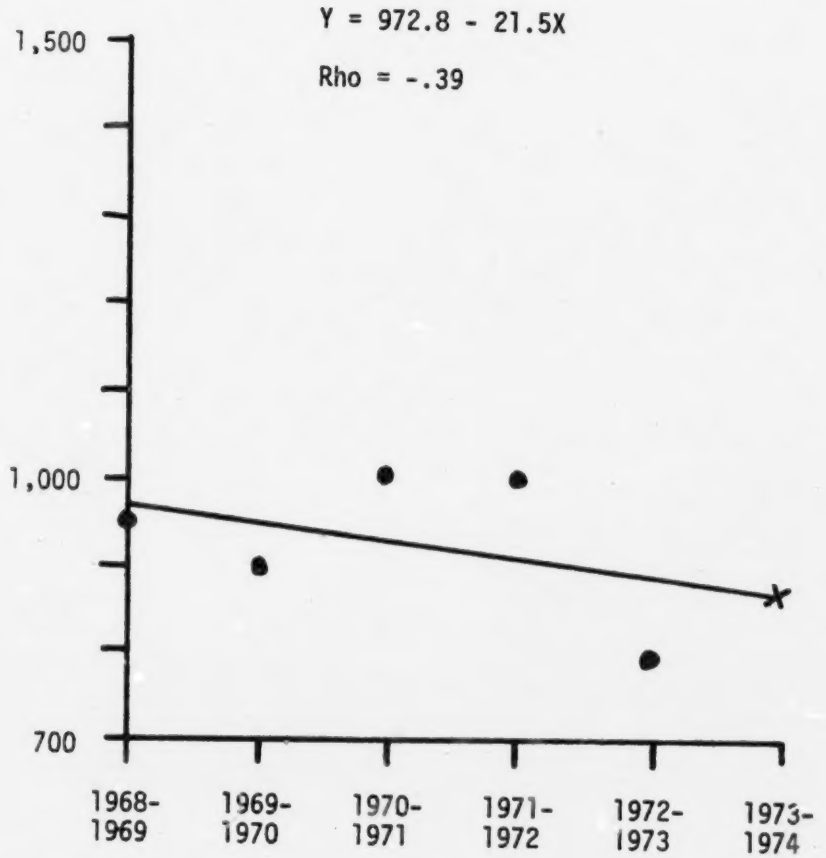
GRAPH NO. 11: BUDGETED INSTRUCTIONAL AREA--EVENING COLLEGE, UNDERGRADUATE STUDENT CREDIT HOURS--SPRINGS, 1968-1974



GRAPH NO. 12: BUDGETED INSTRUCTIONAL AREA--GRADUATE DIVISION (ARTS, SCIENCES AND EDUCATION), GRADUATE STUDENT CREDIT HOURS--FALLS, 1968-1974

● = Actual SCH

X = FY 1973-1974 Regression estimated SCH



GRAPH NO. 13: BUDGETED INSTRUCTIONAL AREA--GRADUATE DIVISION (ARTS, SCIENCES, AND EDUCATION), GRADUATE STUDENT CREDIT HOURS--SPRINGS, 1968-1974

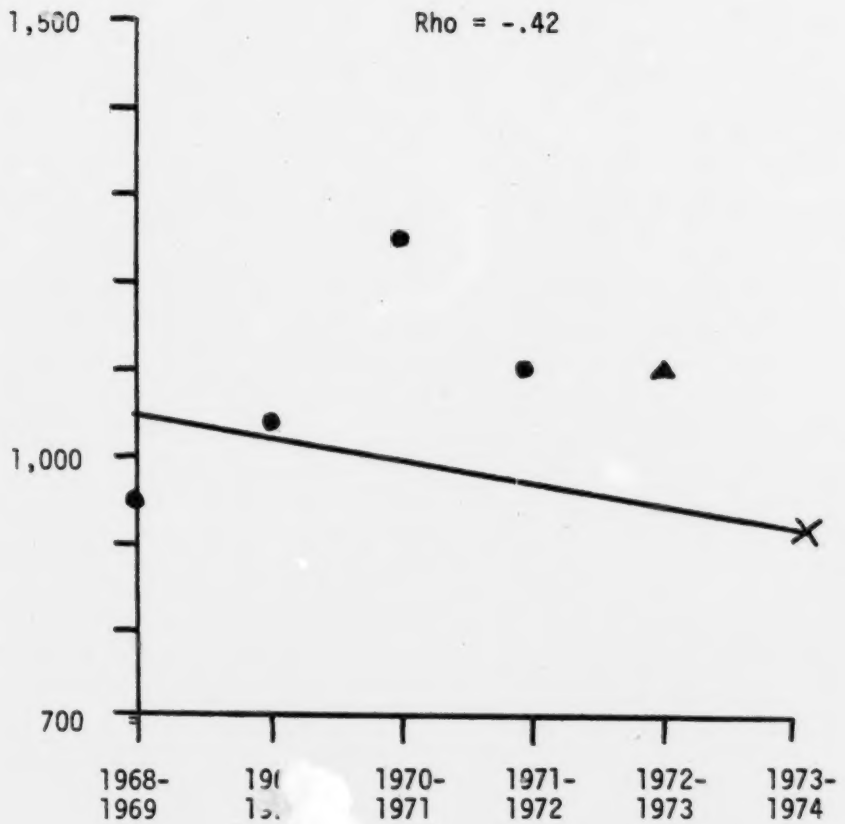
● = Actual SCH

▲ = FY 1972-1973 Budget estimated SCH

✕ = FY 1973-1974 Regression estimated SCH

Y = 1055. - 28.5X

Rho = -.42

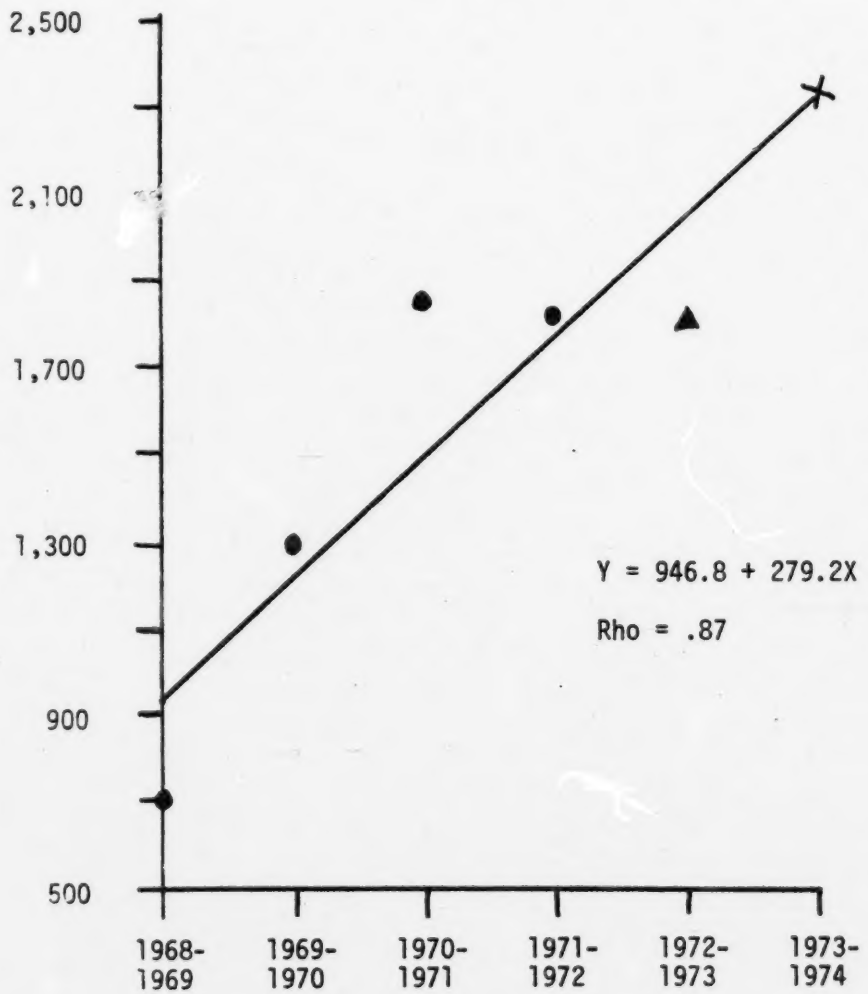


GRAPH NO. 14: BUDGETED INSTRUCTIONAL AREA--INTERSESSION, PRIMARILY UNDERGRADUATE STUDENT CREDIT HOURS--1968-1974

● = Actual SCH

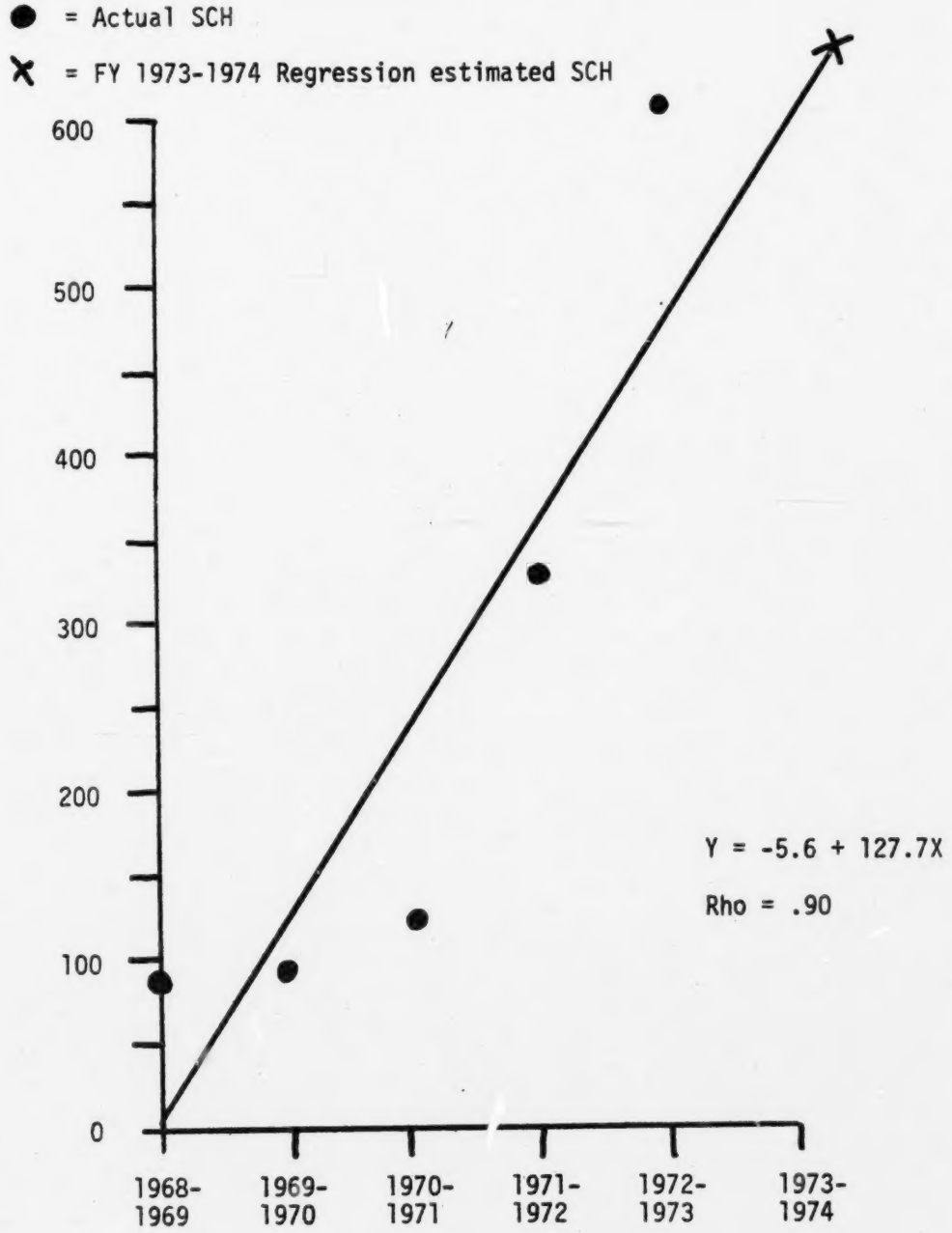
▲ = FY 1972-1973 Budget estiamted SCH

✕ = FY 1973-1974 Regression estimated SCH



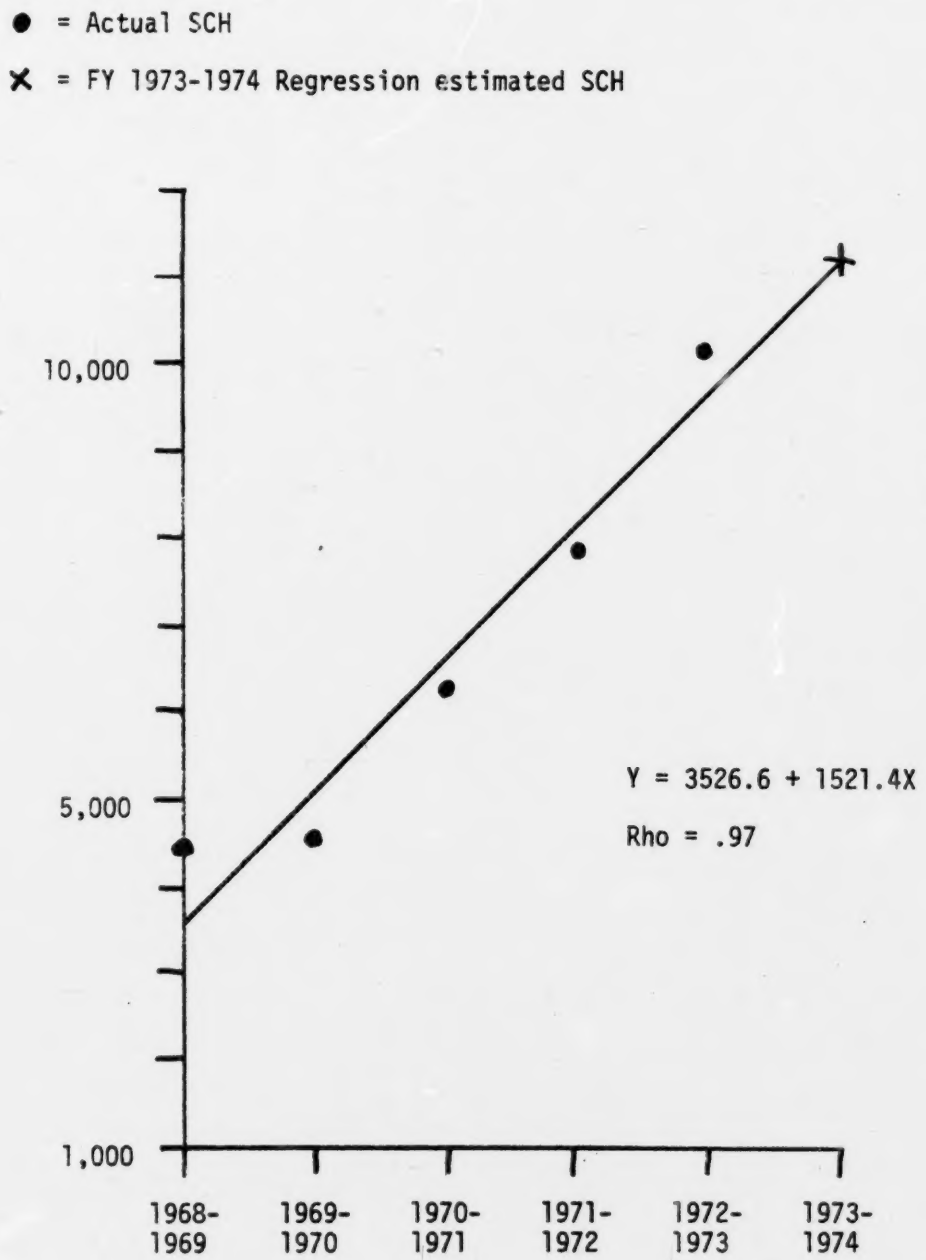
GRAPH NO. 15: BUDGETED INSTRUCTIONAL AREA--LAW, PROFESSIONAL LEVEL

STUDENT CREDIT HOURS--SUMMERS, 1968-1974



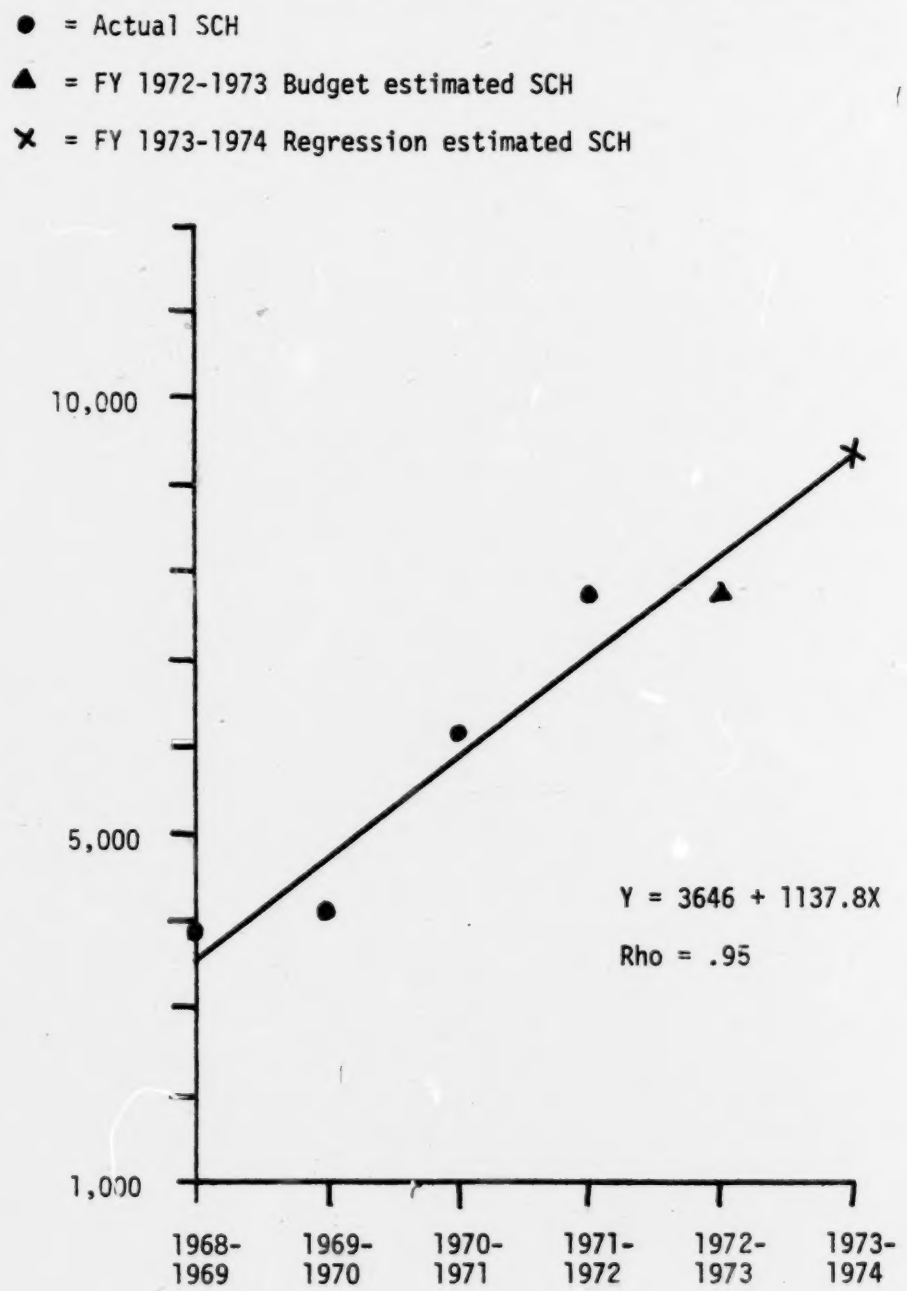
GRAPH NO. 16: BUDGETED INSTRUCTIONAL AREA--LAW, PROFESSIONAL LEVEL

STUDENT CREDIT HOURS--FALLS, 1968-1974

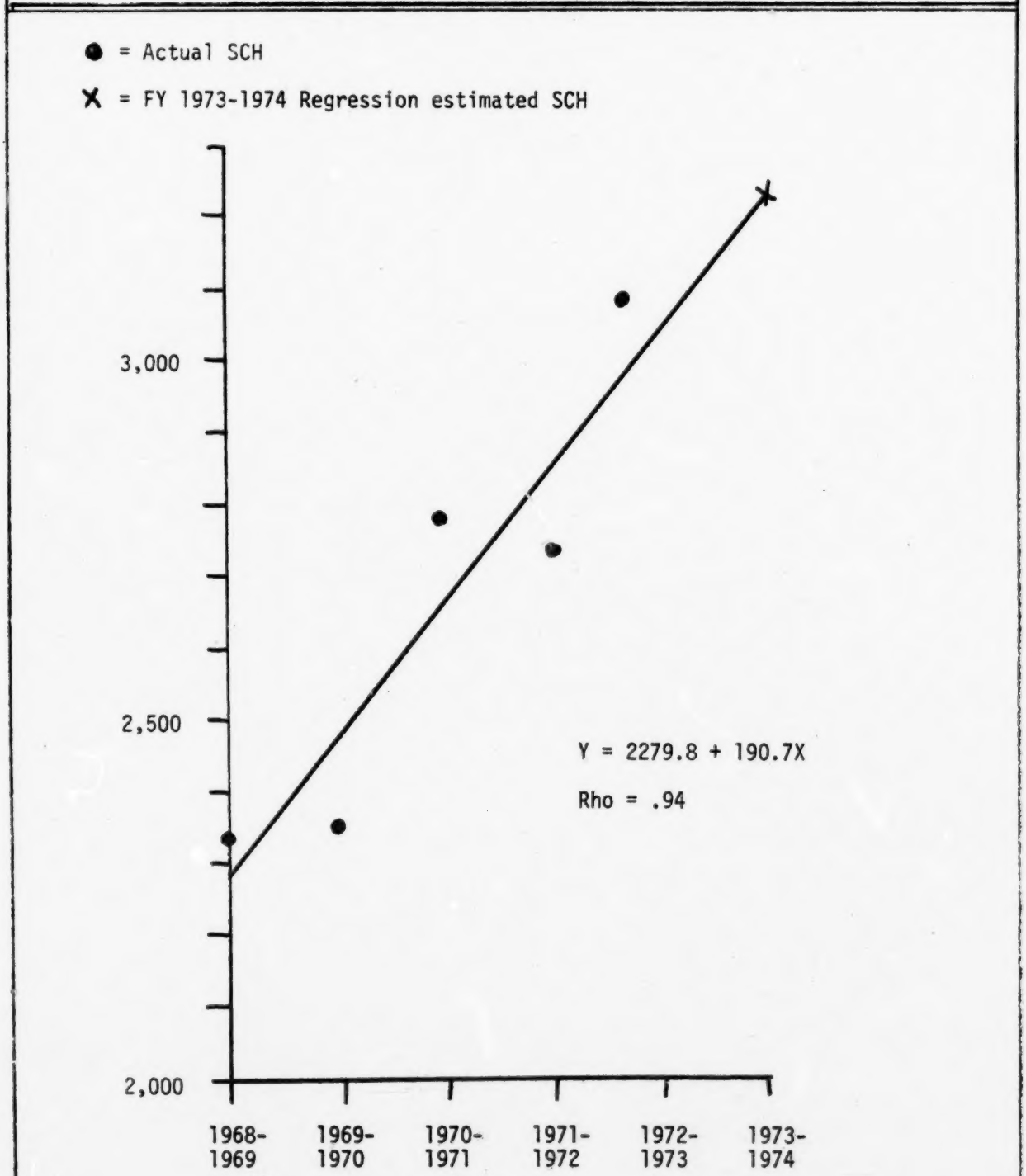


GRAPH NO. 17: BUDGETED INSTRUCTIONAL AREA--LAW, PROFESSIONAL LEVEL

STUDENT CREDIT HOURS--SPRINGS, 1968-1974



GRAPH NO. 18: BUDGETED INSTRUCTIONAL AREA--NURSING, UNDERGRADUATE STUDENT CREDIT HOURS--FALLS, 1968-1974



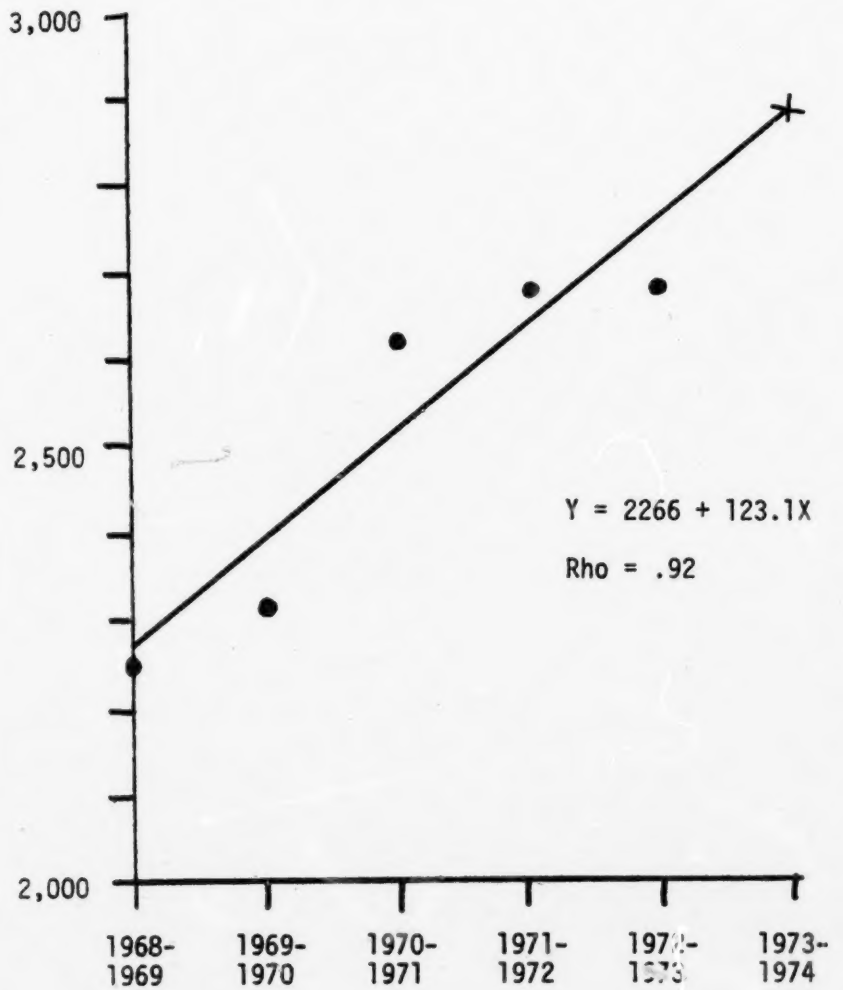
GRAPH NO. 19: BUDGETED INSTRUCTIONAL AREA--NURSING, UNDERGRADUATE

STUDENT CREDIT HOURS--SPRINGS, 1968-1974

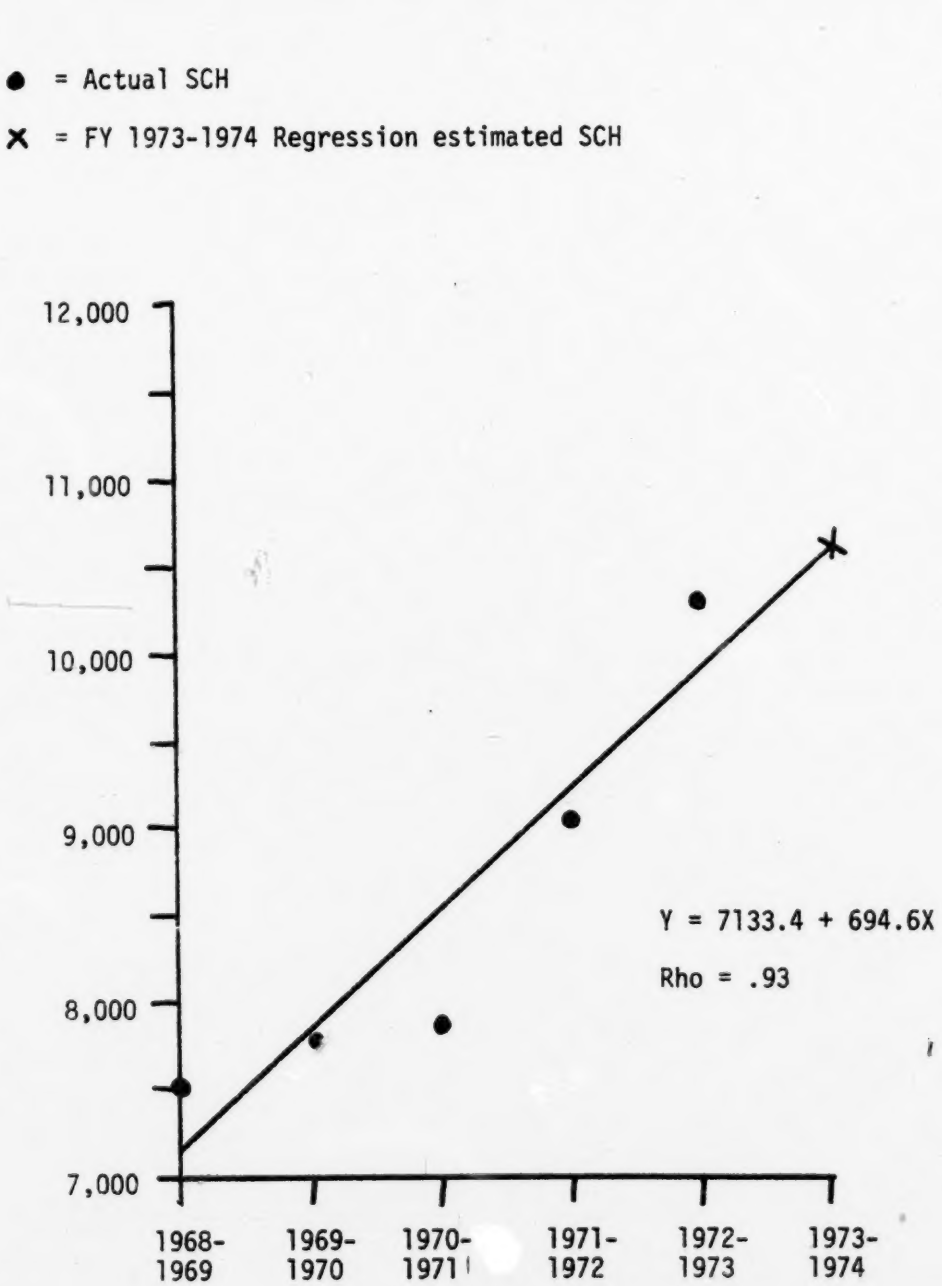
● = Actual SCH

▲ = FY 1972-1973 Budget estimated SCH

X = FY 1973-1974 Regression estimated SCH



GRAPH NO. 20: BUDGETED INSTRUCTIONAL AREA--SCIENCES, UNDERGRADUATE STUDENT CREDIT HOURS--FALLS, 1968-1974



GRAPH NO. 21: BUDGETED INSTRUCTIONAL AREA--SCIENCES, UNDERGRADUATE STUDENT CREDIT HOURS--SPRINGS, 1968-1974

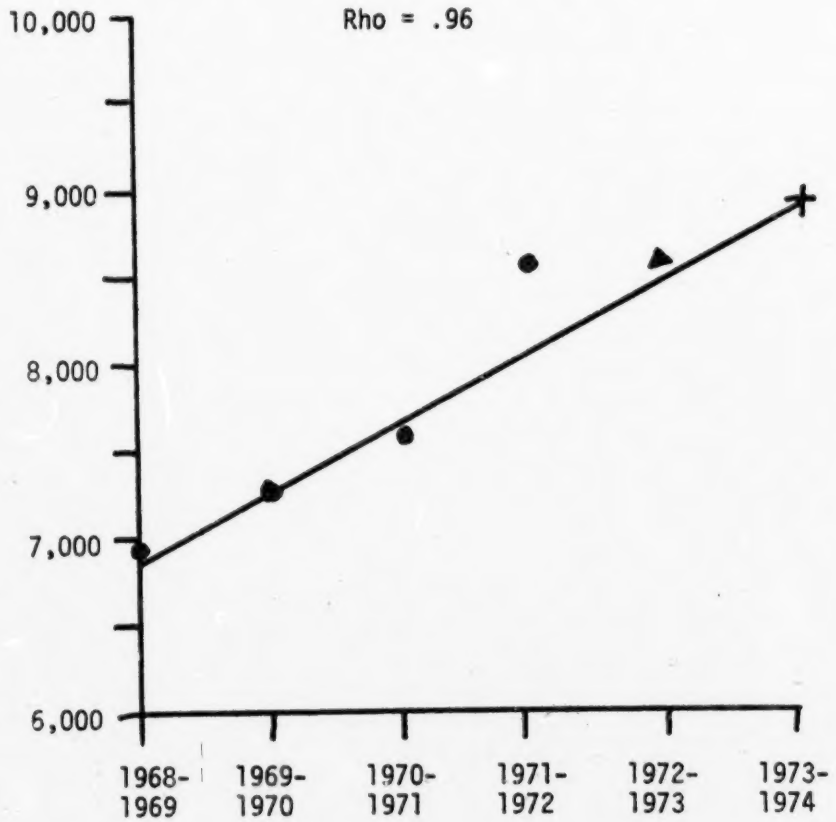
● = Actual SCH

▲ = FY 1972-1973 Budget estimated SCH

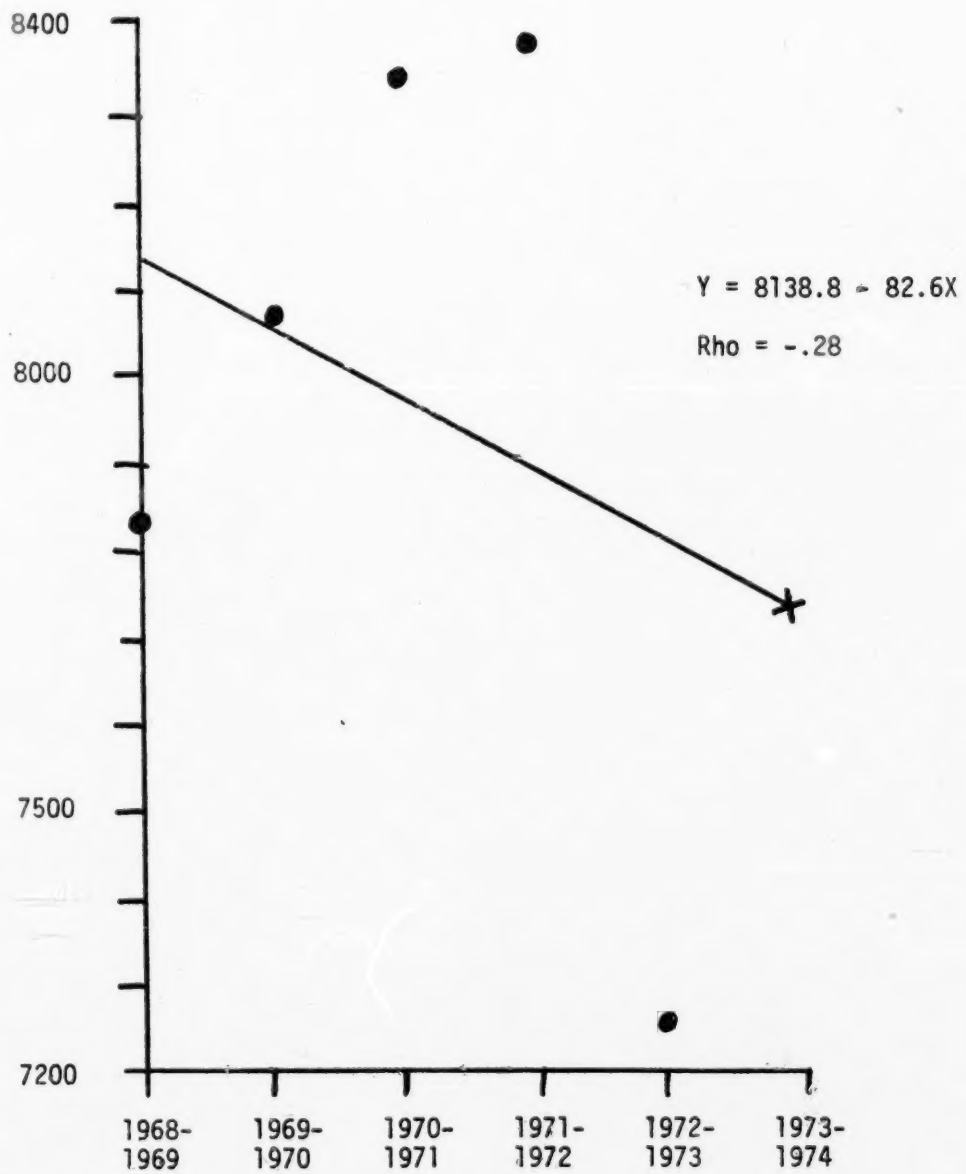
✕ = FY 1973-1974 Regression estimated SCH

Y = 6873.8 + 449.4X

Rho = .96



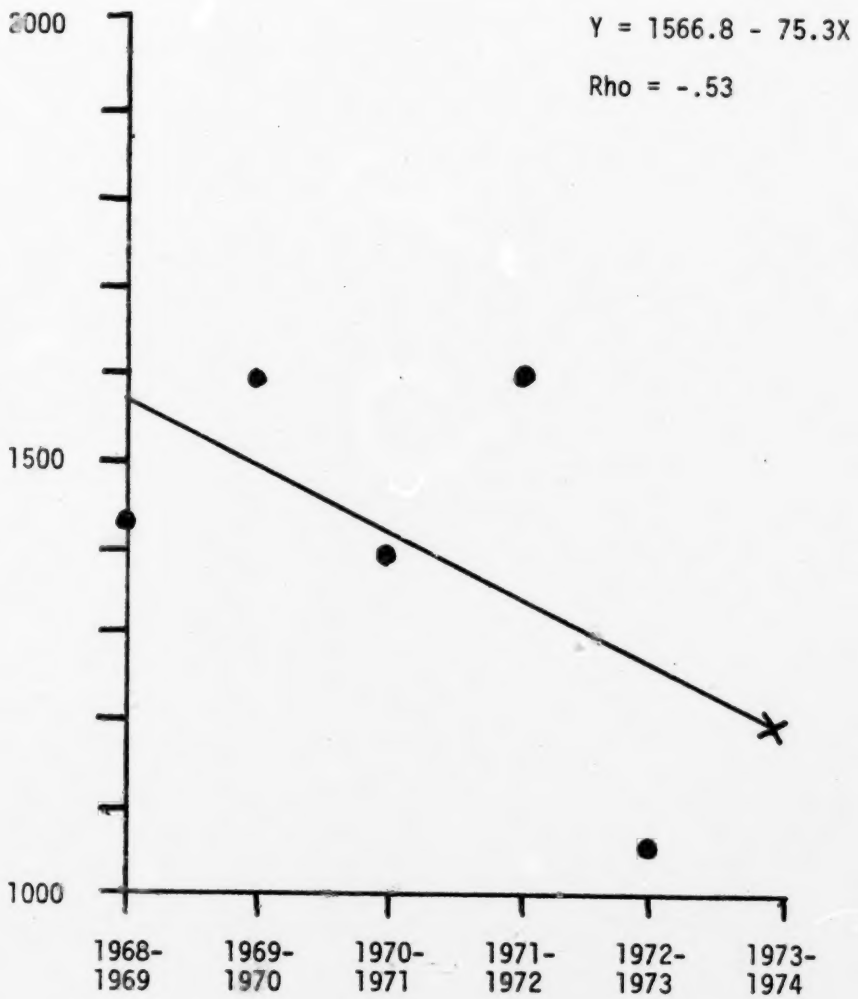
GRAPH NO. 22: BUDGETED INSTRUCTIONAL AREA--SUMMER SESSION, UNDERGRADUATE STUDENT CREDIT HOURS--1968-1974



GRAPH NO. 23: BUDGETED INSTRUCTIONAL AREA--SUMMER SESSION, GRADUATE STUDENT CREDIT HOURS--1968-1974

● = Actual SCH

✕ = FY 1973-1974 Regression estimated SCH

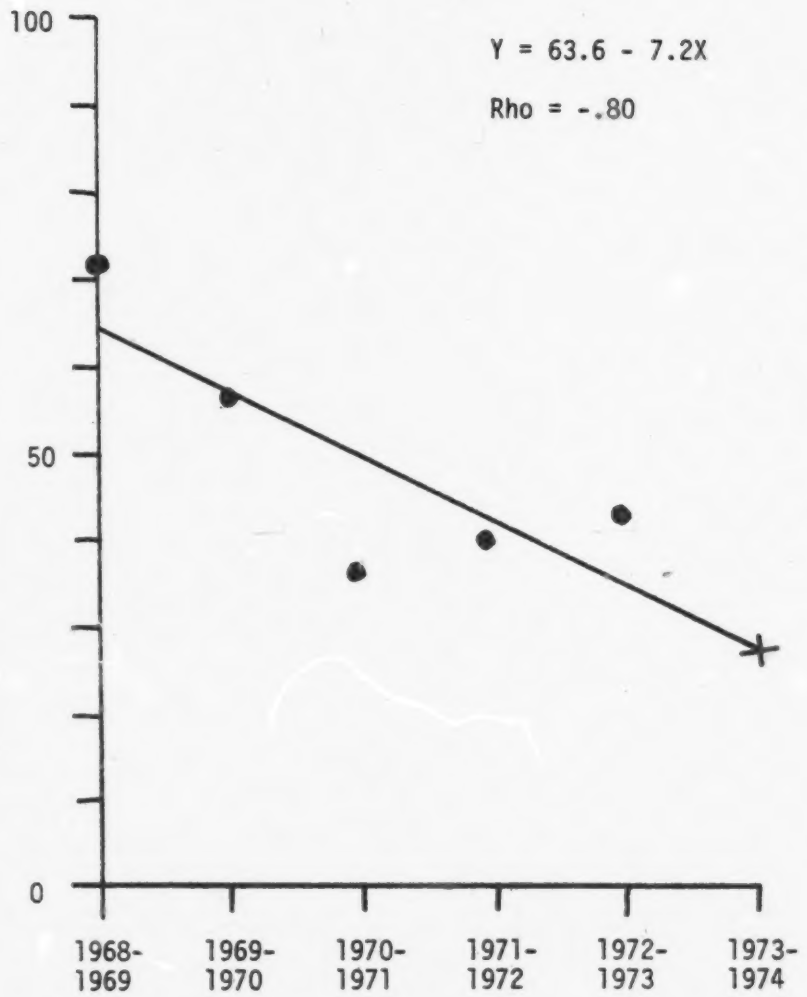


APPENDIX D

GRAPH NO. 24: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--IESP-ENGLISH FOR FOREIGN STUDENTS, NON-CREDIT COURSES--FALLS, 1968-1974

● = Actual enrollments

✕ = FY 1973-1974 Regression estimated enrollments

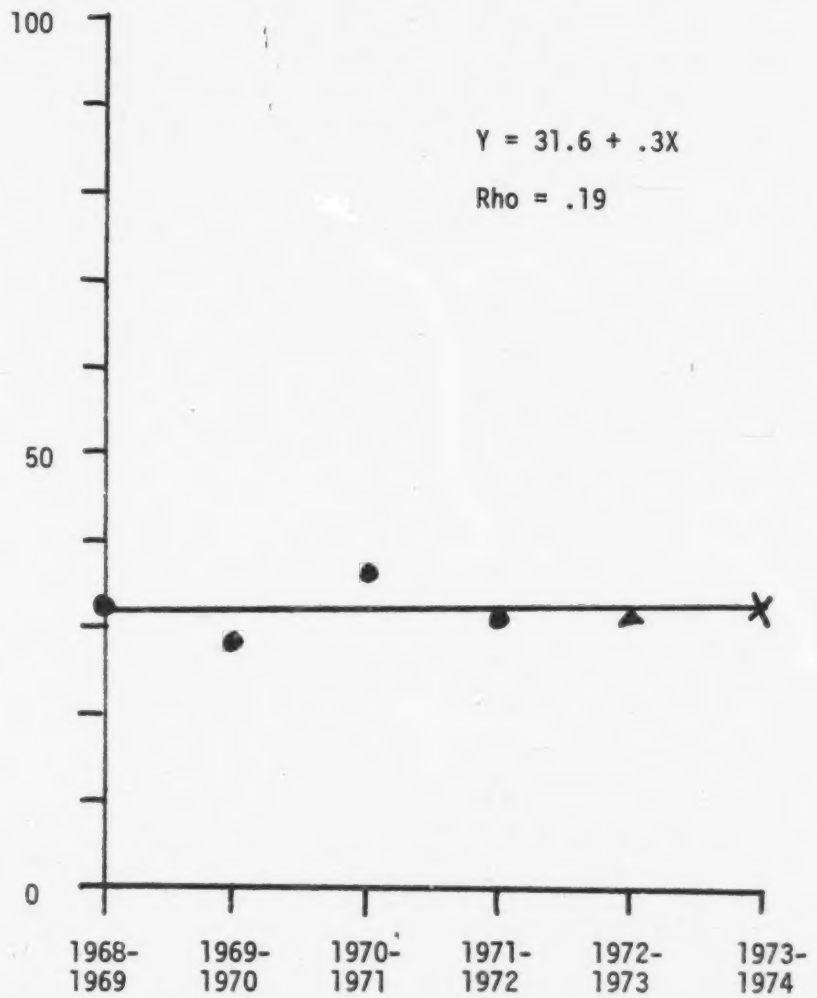


GRAPH NO. 25: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--IESP-ENGLISH FOR FOREIGN STUDENTS, NON-CREDIT COURSES--SPRINGS, 1968-1974

● = Actual enrollments

▲ = FY 1972-1973 Budget estimated enrollments

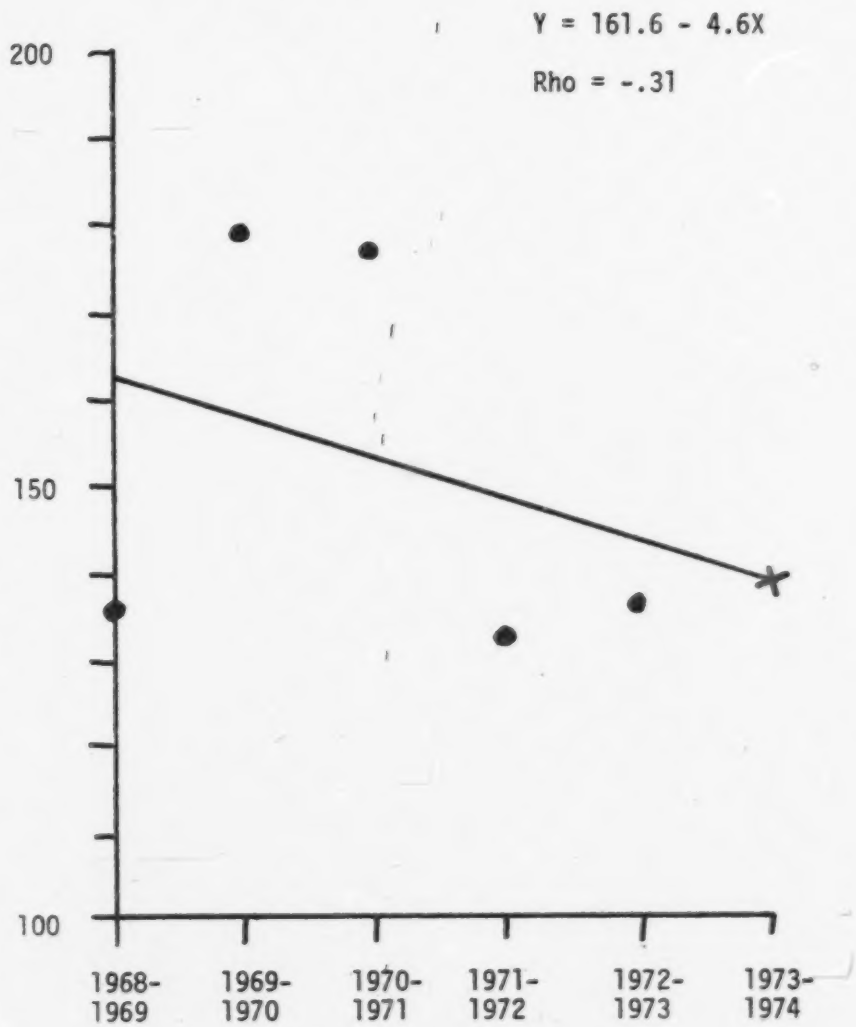
X = FY 1973-1974 Regression estimated enrollments



GRAPH NO. 26: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--LABOR MANAGEMENT SCHOOL, NON-CREDIT COURSES--FALLS, 1968-1974

● = Actual enrollments

X = FY 1973-1974 Regression estimated enrollments

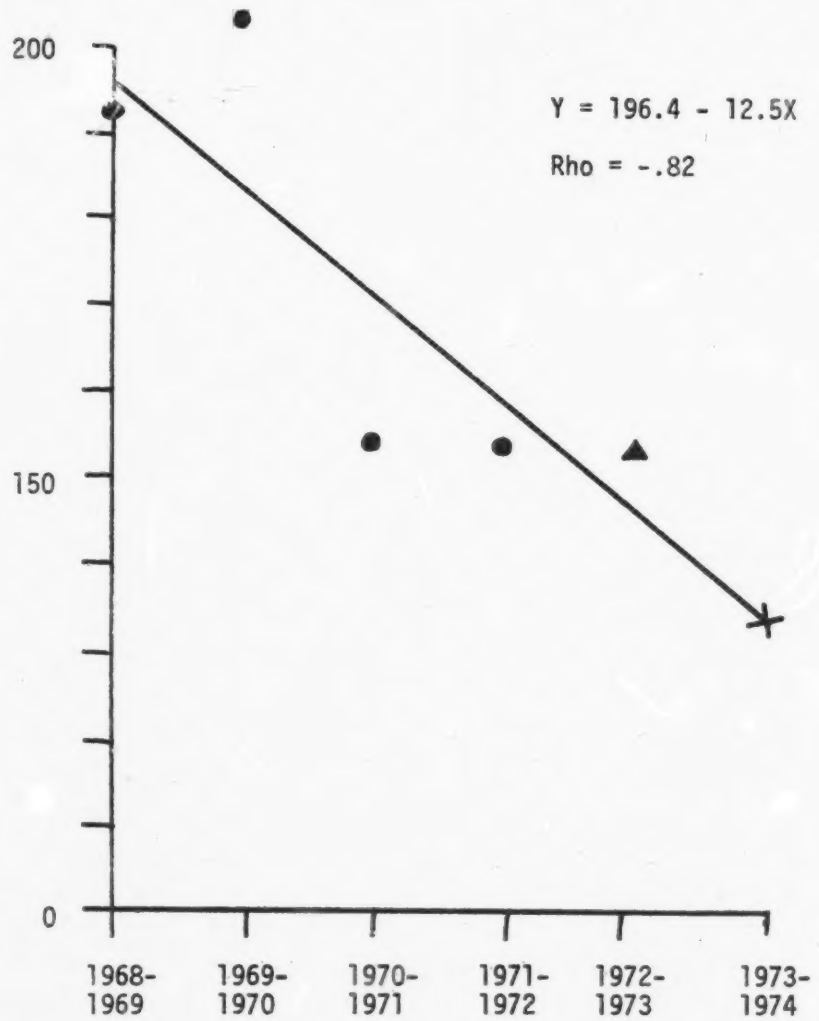


GRAPH NO. 27: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--LABOR MANAGEMENT SCHOOL, NON-CREDIT COURSES--SPRINGS, 1968-1974

● = Actual enrollments

▲ = FY 1972-1973 Budget estimated enrollments

X = FY 1973-1974 Regression estimated enrollments

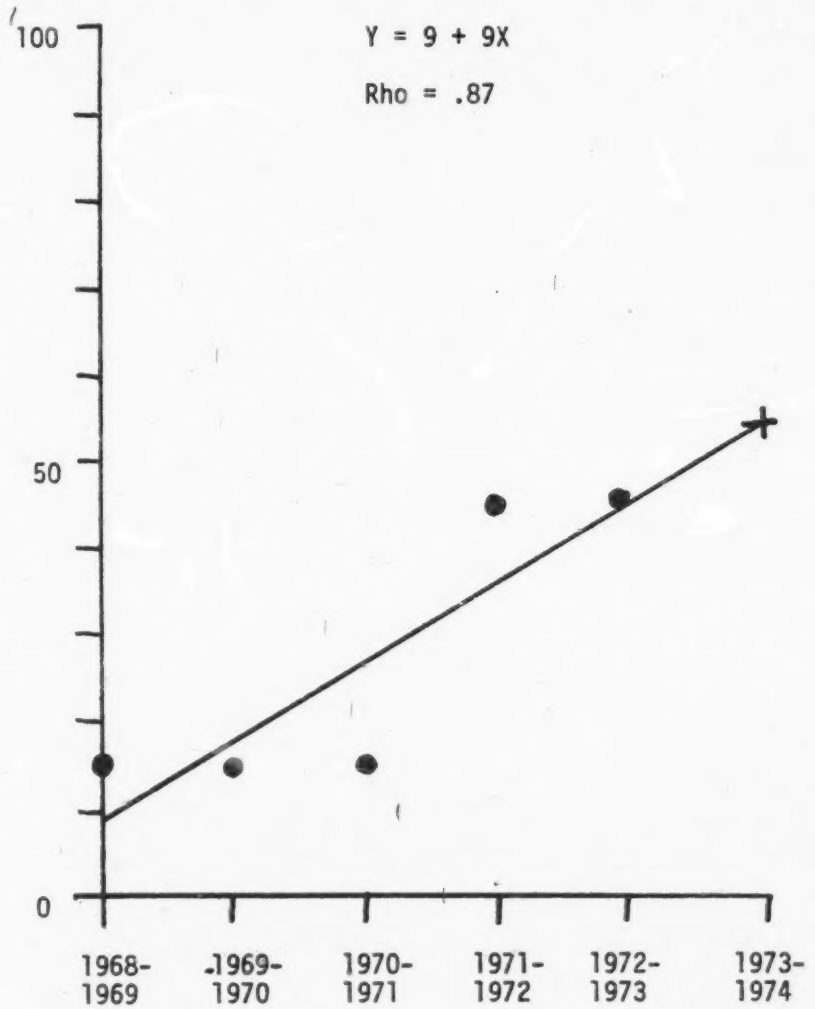


GRAPH NO. 28: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--

REHABILITATION WORKSHOP ADMINISTRATION, NON-CREDIT COURSES--FALLS, 1968-1974

● = Actual enrollments

X = FY 1973-1974 Regression estimated enrollments



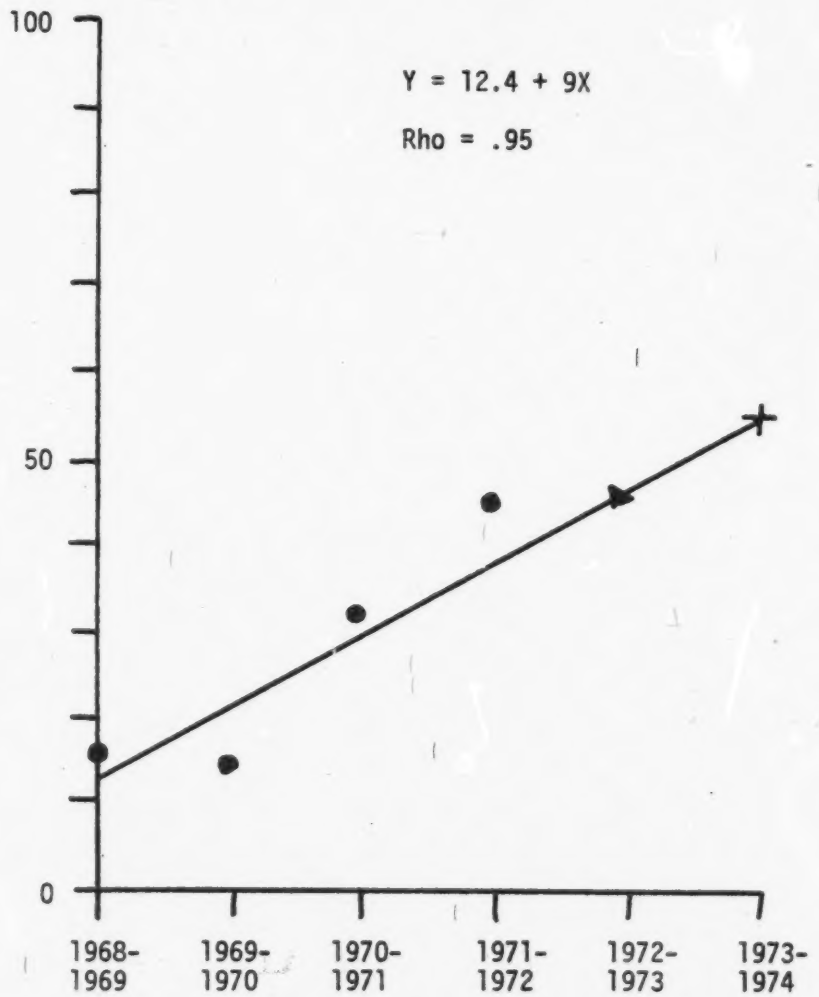
GRAPH NO. 29, BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--

REHABILITATION WORKSHOP ADMINISTRATION, NON-CREDIT COURSES--SPRINGS, 1968-1974

● = Actual enrollments

▲ = FY 1972-1973 Budget estimated enrollments

X = FY 1973-1974 Regression estimated enrollments

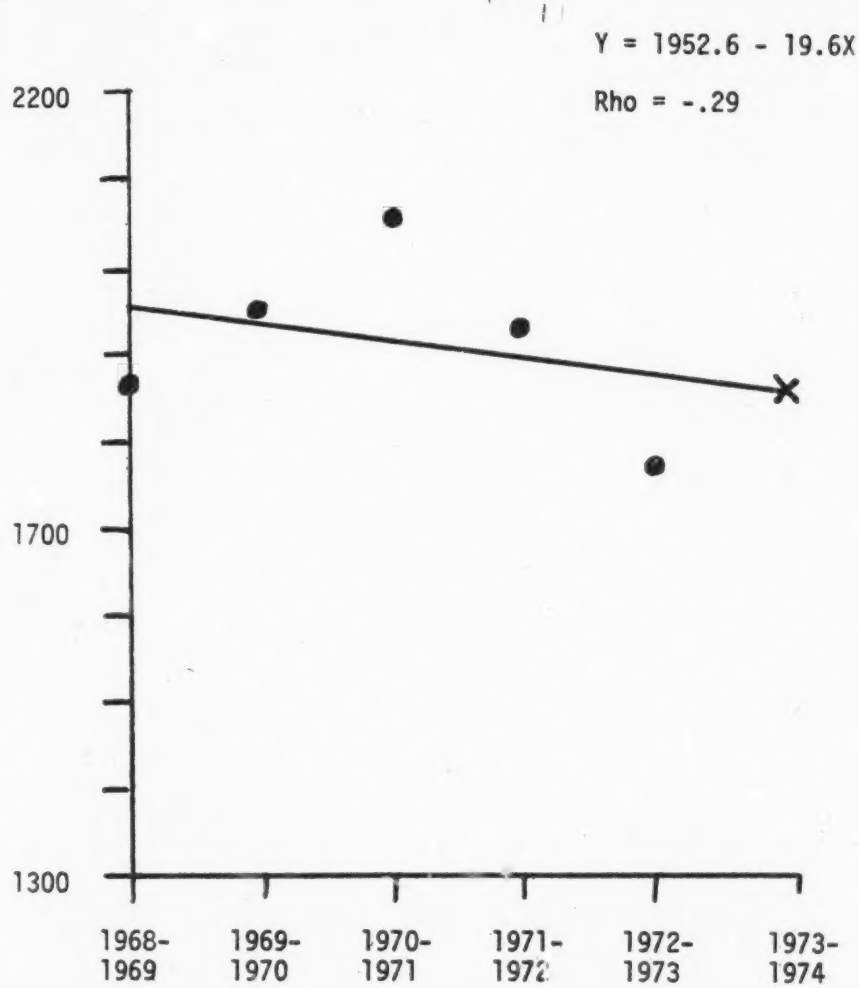


APPENDIX E

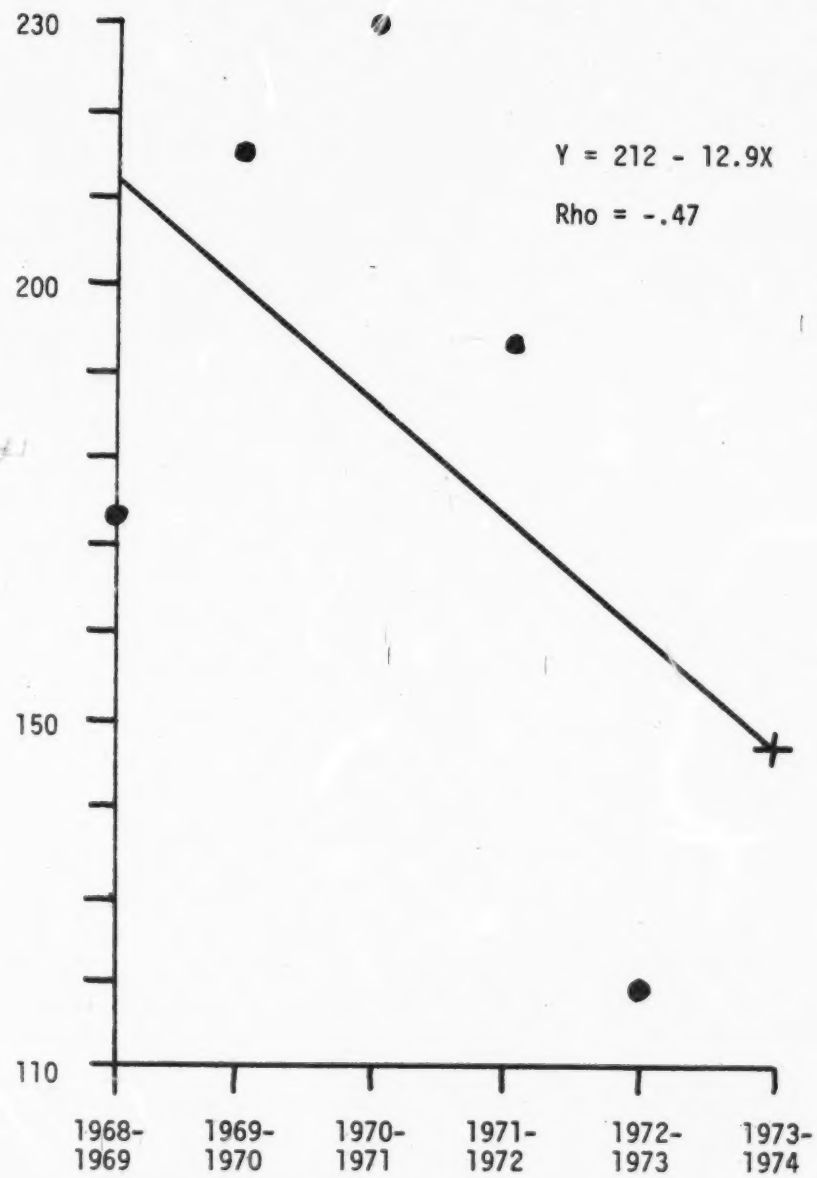
GRAPH NO. 30: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--ARTS, UNDERGRADUATE FULL TIME STUDENTS--FALLS, 1968-1974

● = Actual enrollments

X = FY 1973-1974 Regression estimated enrollments



GRAPH NO. 31: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--ARTS, UNDERGRADLATE PART TIME STUDENTS--FALLS, 1968-1974

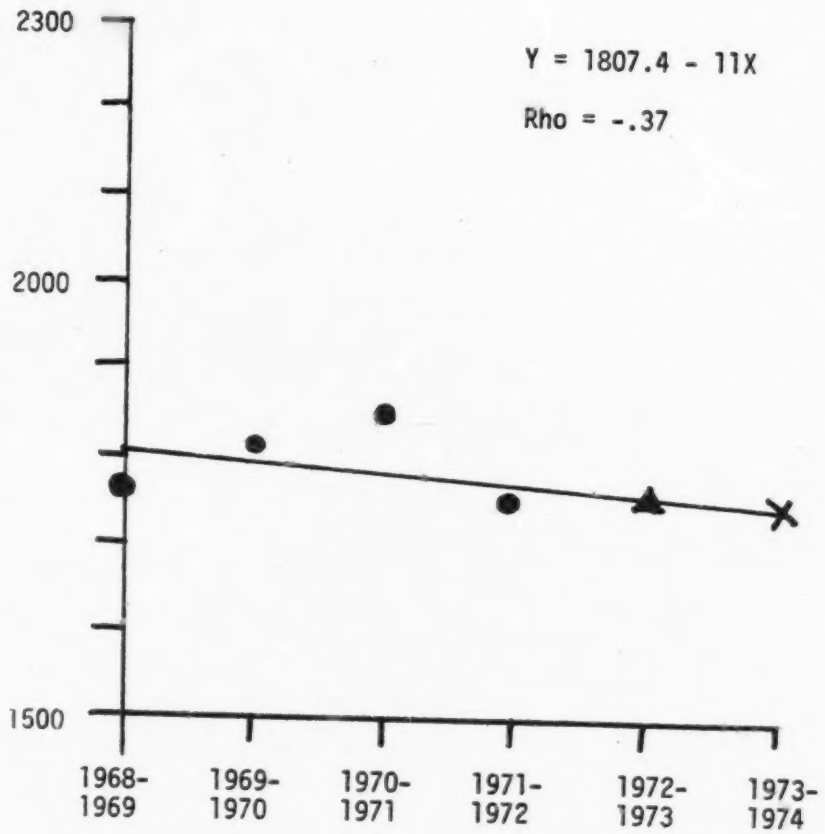


GRAPH NO. 32: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--ARTS, UNDERGRADUATE FULL TIME STUDENTS--SPRINGS, 1968-1974

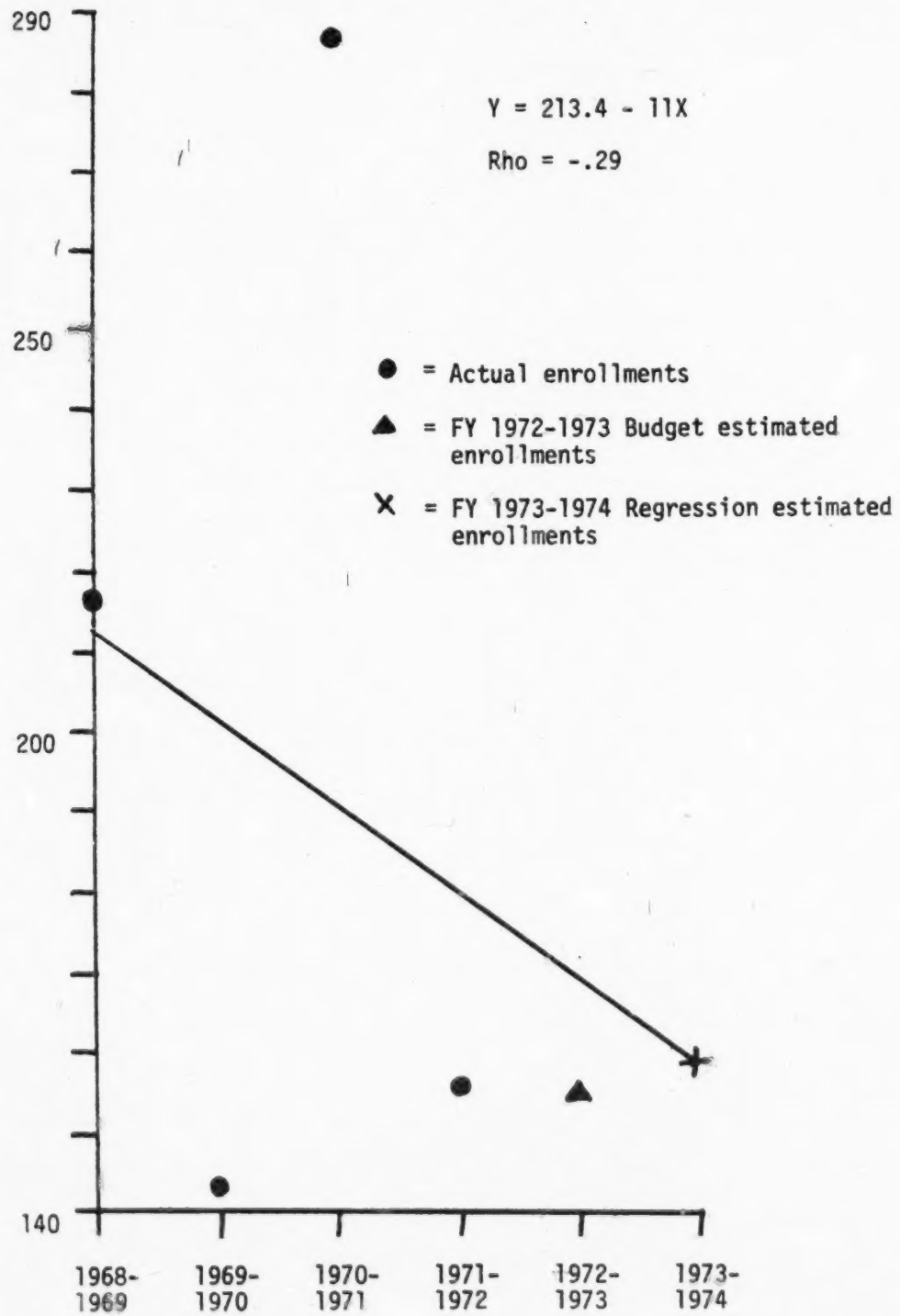
● = Actual enrollments

▲ = FY 1972-1973 Budget estimated enrollments

✕ = FY 1973-1974 Regression estimated enrollments



GRAPH NO. 33: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--ARTS, UNDERGRADUATE PART TIME STUDENTS--SPRINGS, 1968-1974



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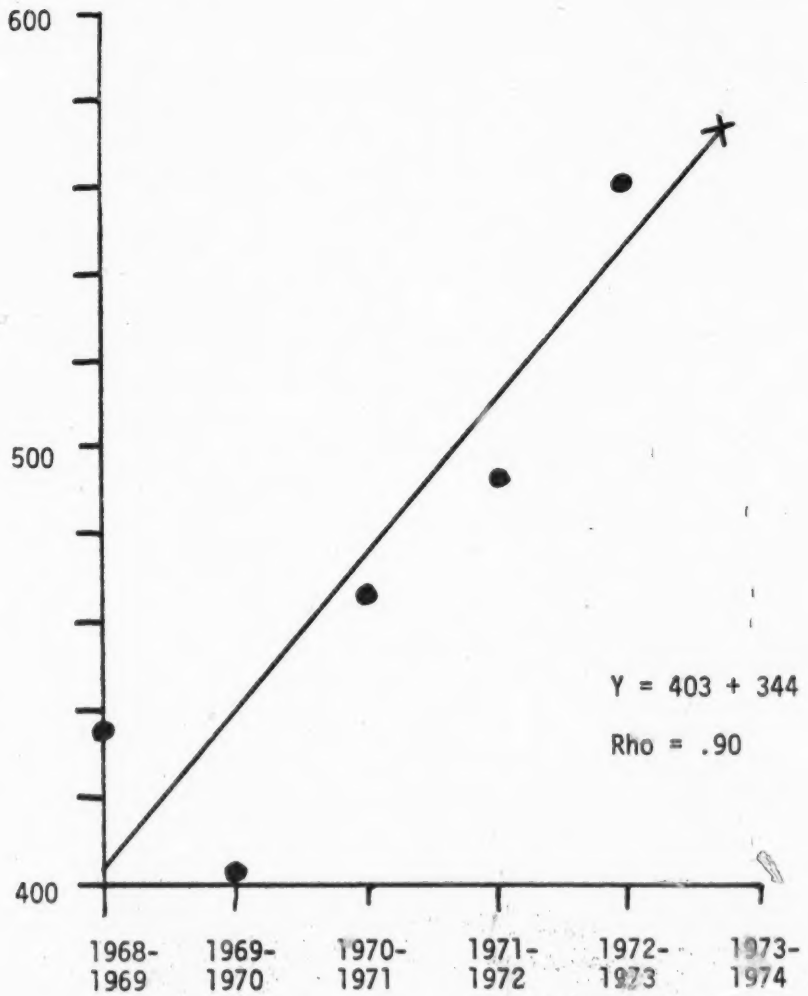
GRAPH NO. 34: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--BUSINESS ADMINISTRATION, UNDERGRADUATE FULL TIME STUDENTS--FALLS, 1968-1974

● = Actual enrollments

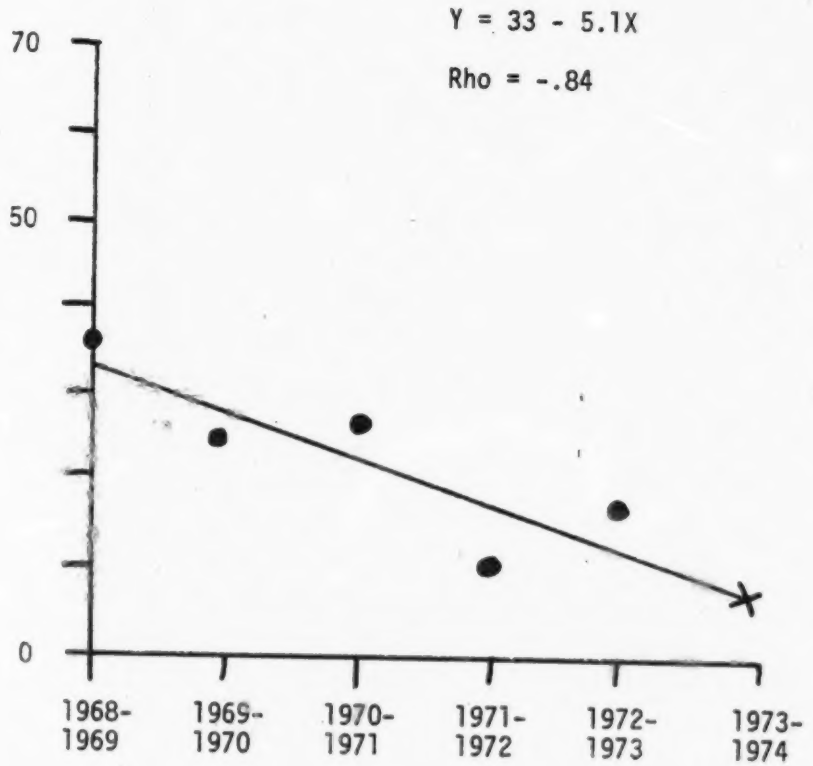
X = FY 1973-1974 Regression estimated enrollments



GRAPH NO. 35: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--BUSINESS ADMINISTRATION, UNDERGRADUATE PART TIME STUDENTS--FALLS, 1968-1974

● = Actual enrollments

✕ = FY 1973-1974 Regression estimated enrollments

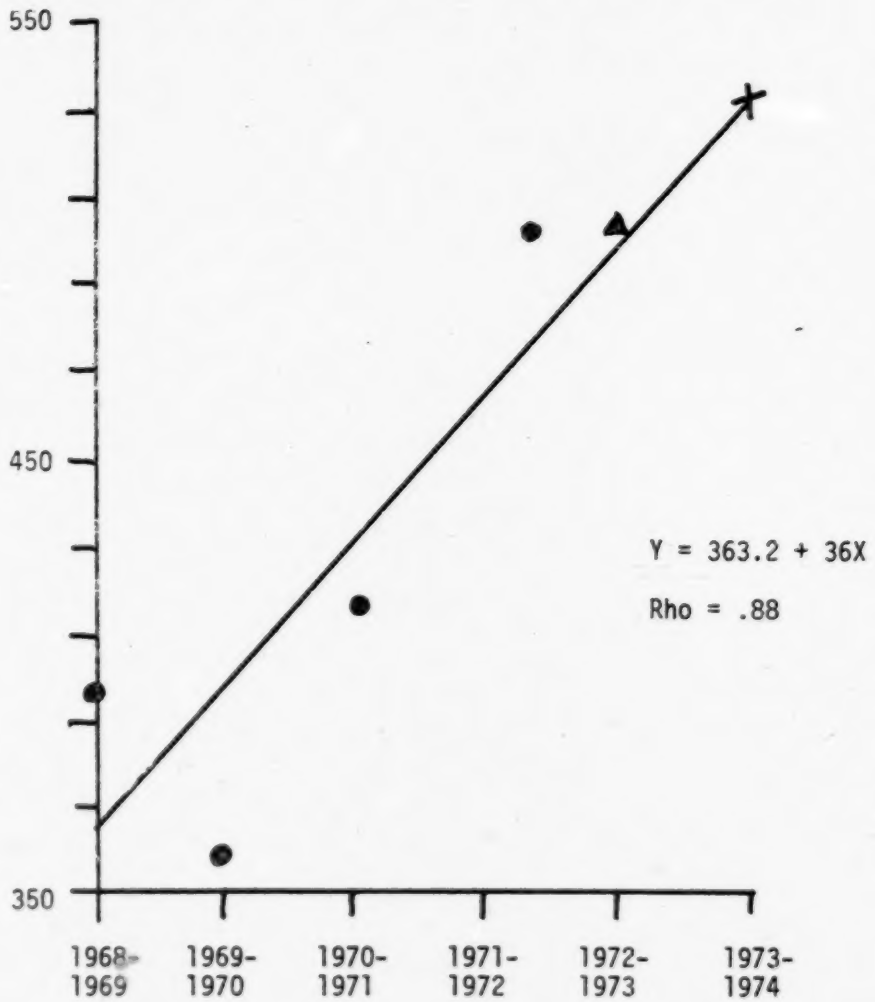


GRAPH NO. 36: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--BUSINESS ADMINISTRATION, UNDERGRADUATE FULL TIME STUDENTS--SPRINGS, 1968-1974

● = Actual enrollments

▲ = FY 1972-1973 Budget estimated enrollments

✕ = FY 1973-1974 Regression estimated enrollments

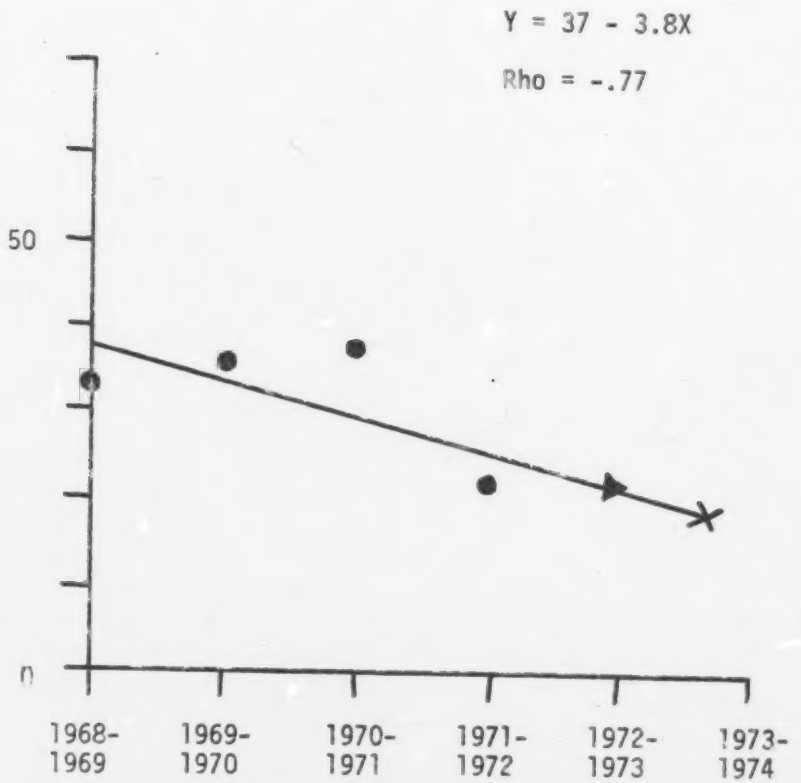


GRAPH NO. 37: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--BUSINESS ADMINISTRATION, UNDERGRADUATE PART TIME STUDENTS--SPRINGS, 1968-1974

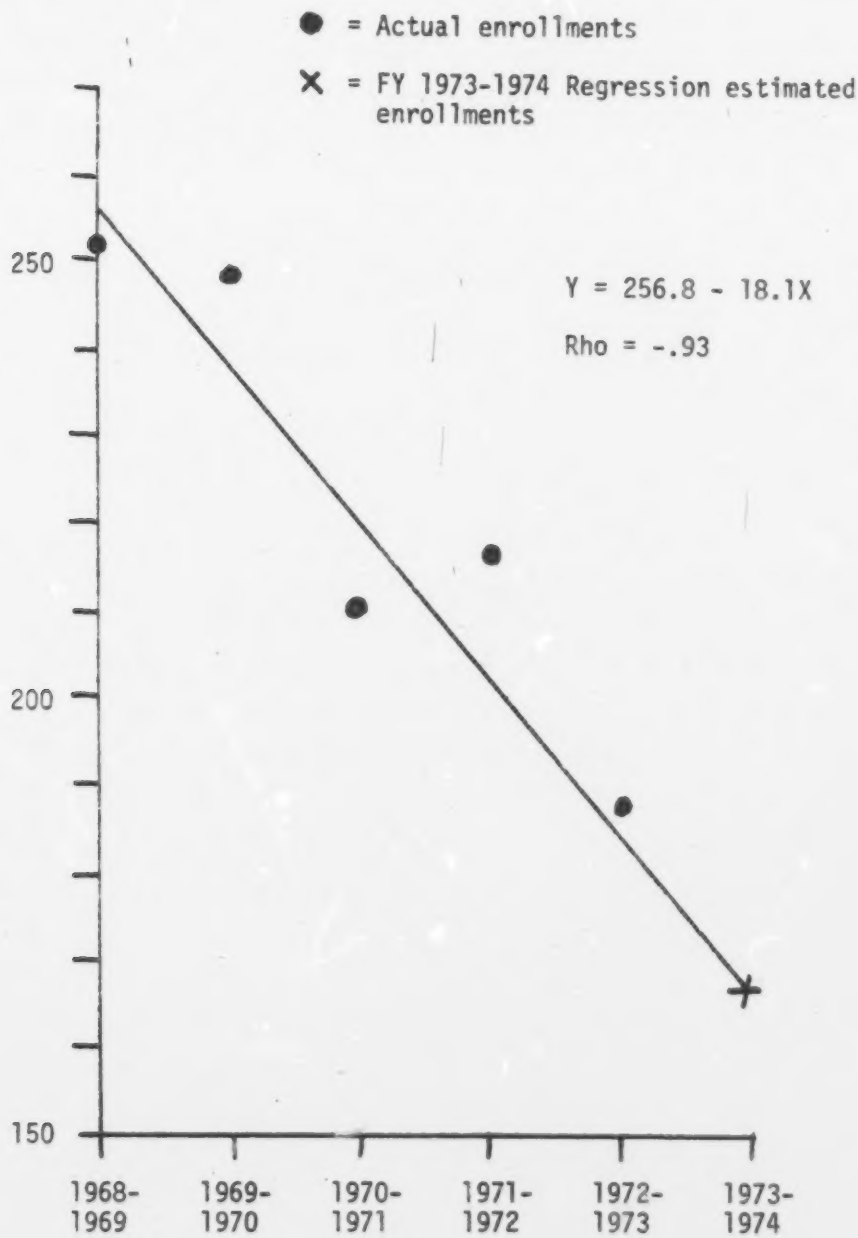
● = Actual enrollments

▲ = FY 1972-1973 Budget estimated enrollments

X = FY 1973-1974 Regression estimated enrollments



GRAPH NO. 38: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--BUSINESS ADMINISTRATION, MBA PROGRAM, PART TIME STUDENTS--FALLS, 1968-1974



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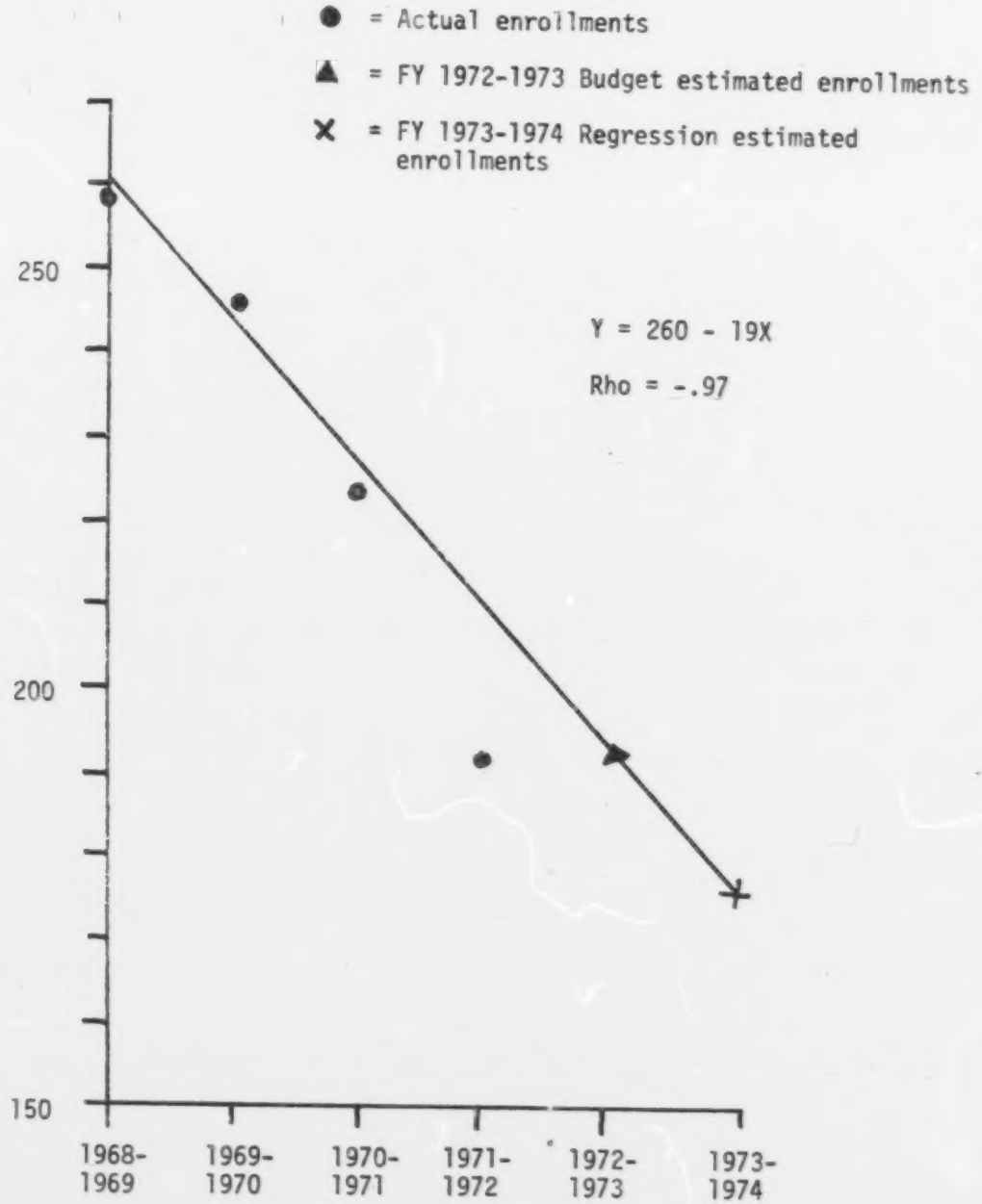
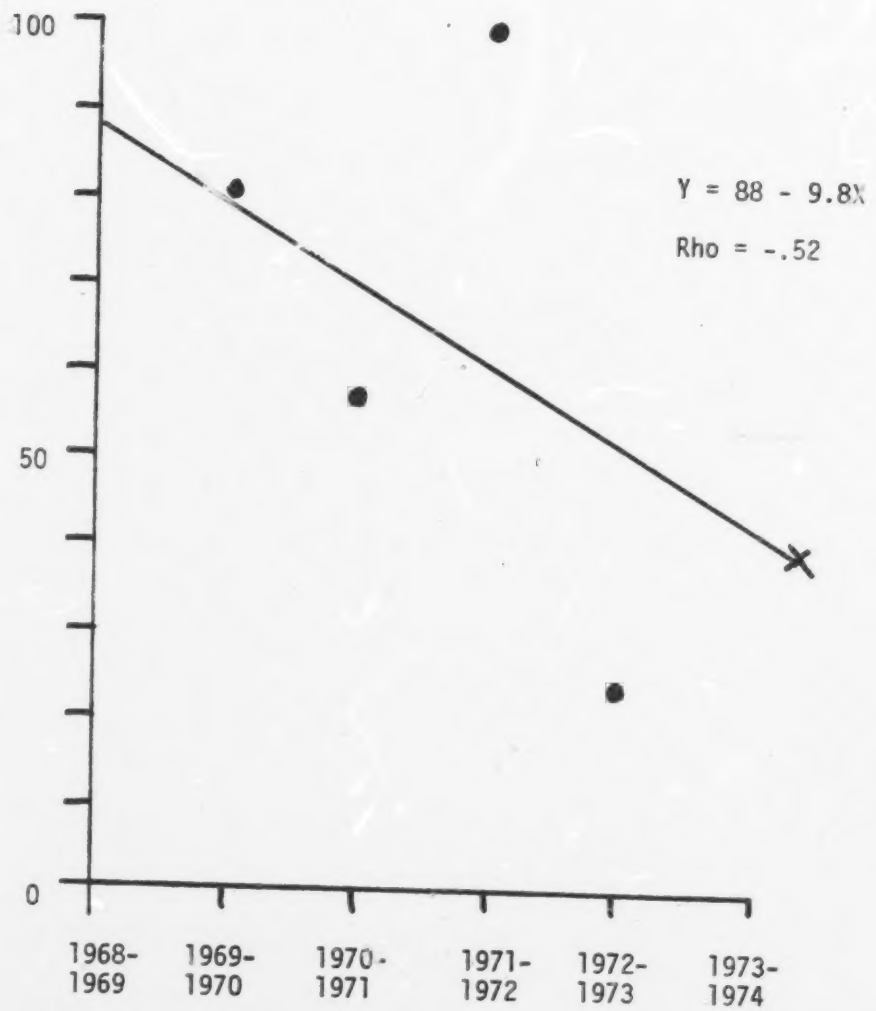
GRAPH NO. 39: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--BUSINESS ADMINISTRATION, MBA PROGRAM, PART TIME STUDENTS--SPRINGS, 1968-1974



GRAPH NO. 40: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--EDUCATION, PROFESSIONAL PROGRAM (EXCLUDING MA AND MAT CURRICULA), FULL TIME STUDENTS--FALLS, 1968-1974

● = Actual enrollments

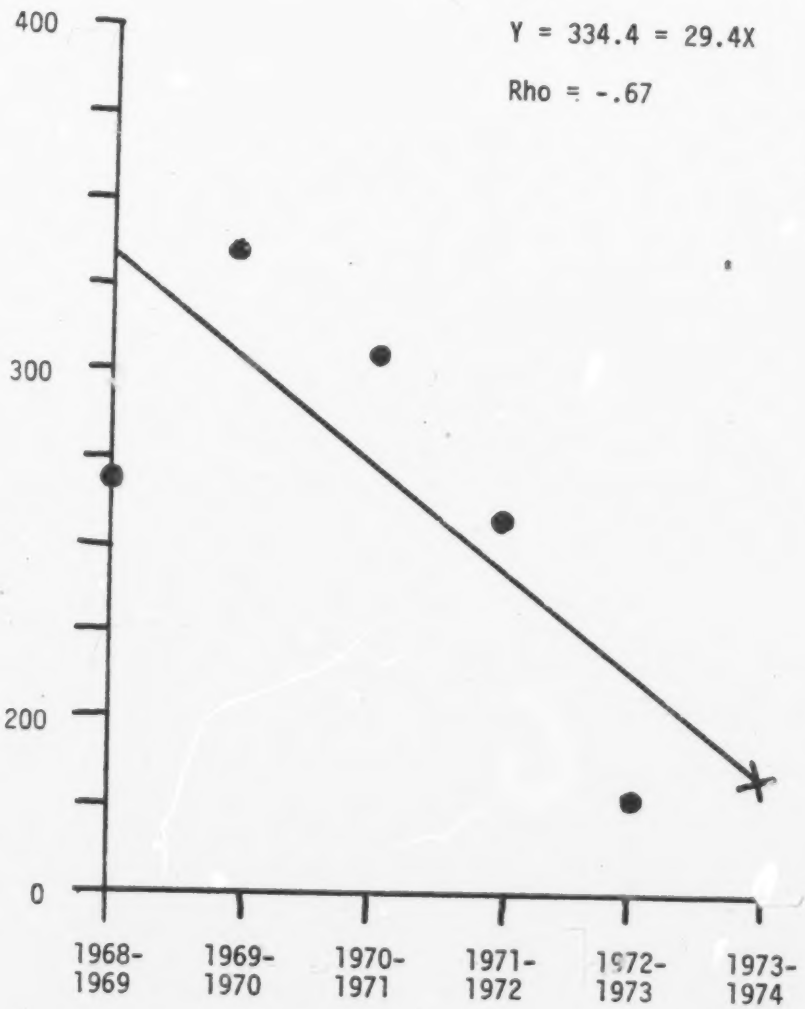
X = FY 1973-1974 Regression estimated enrollments



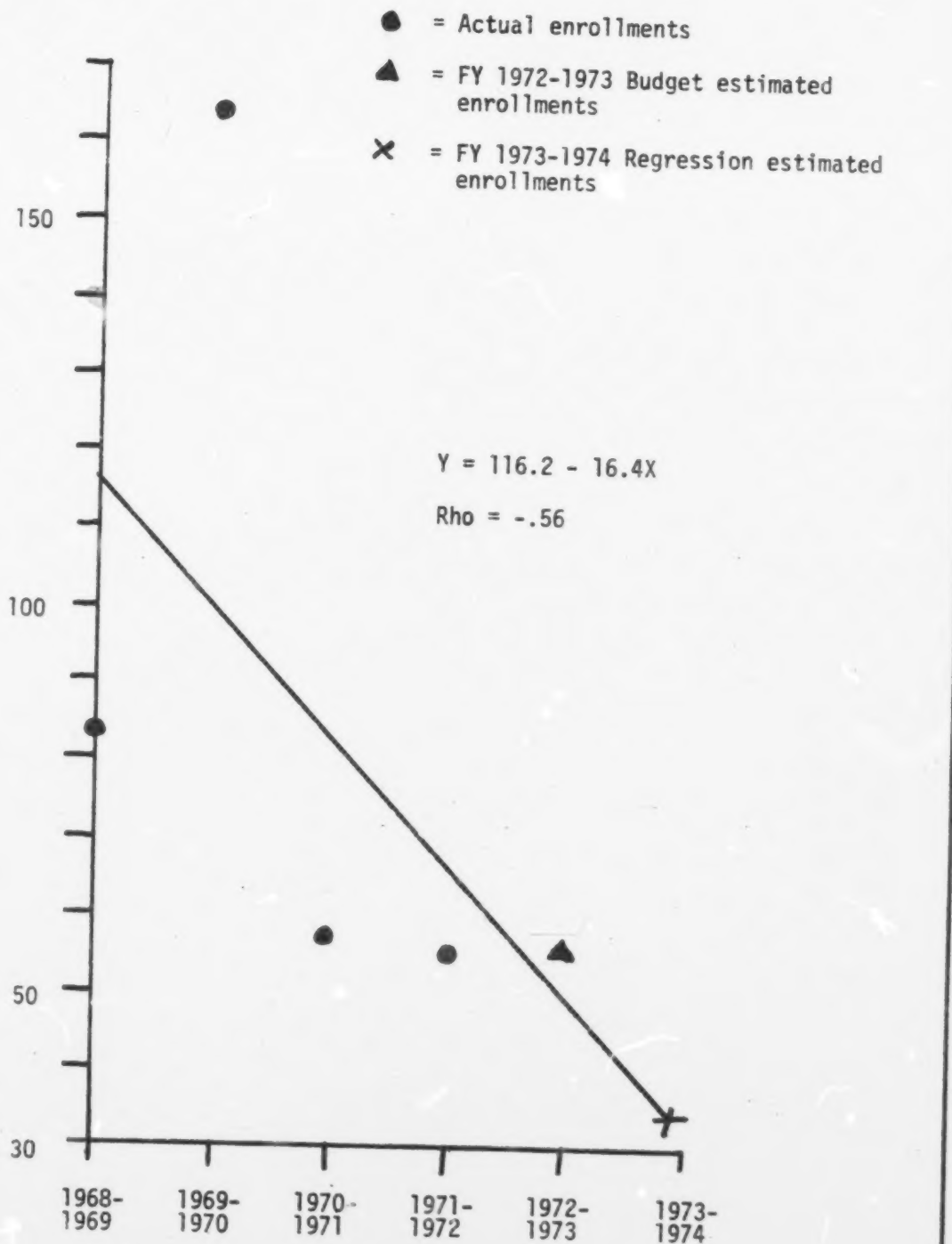
GRAPH NO. 41: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--EDUCATION, PROFESSIONAL PROGRAM (EXCLUDING MA AND MAT CURRICULA), PART TIME STUDENTS--FALLS, 1968-1974

● = Actual enrollments

X = FY 1973-1974 Regression estimated enrollments



GRAPH NO. 42: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--EDUCATION, PROFESSIONAL PROGRAM (EXCLUDING MA AND MAT CURRICULA), FULL TIME STUDENTS--SPRINGS, 1968-1974



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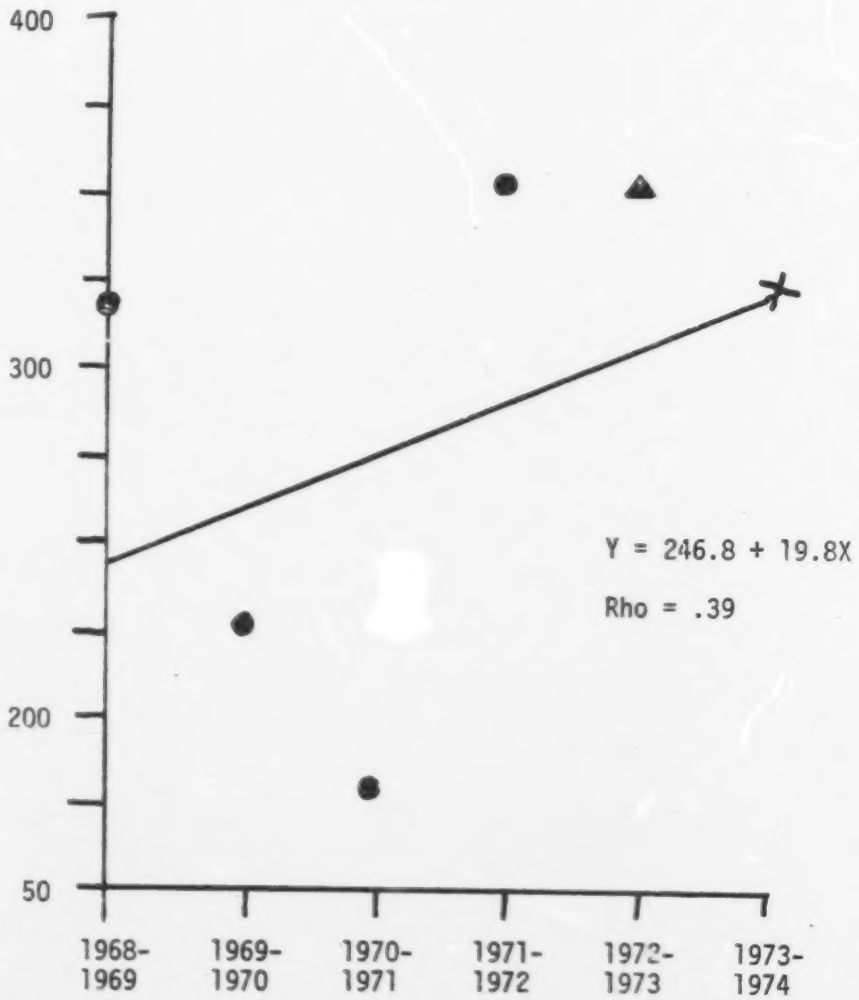
GRAPH NO. 43: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--EDUCATION, PROFESSIONAL PROGRAM (EXCLUDING MA AND MAT CURRICULA), PART TIME STUDENTS--SPRINGS, 1968-1974

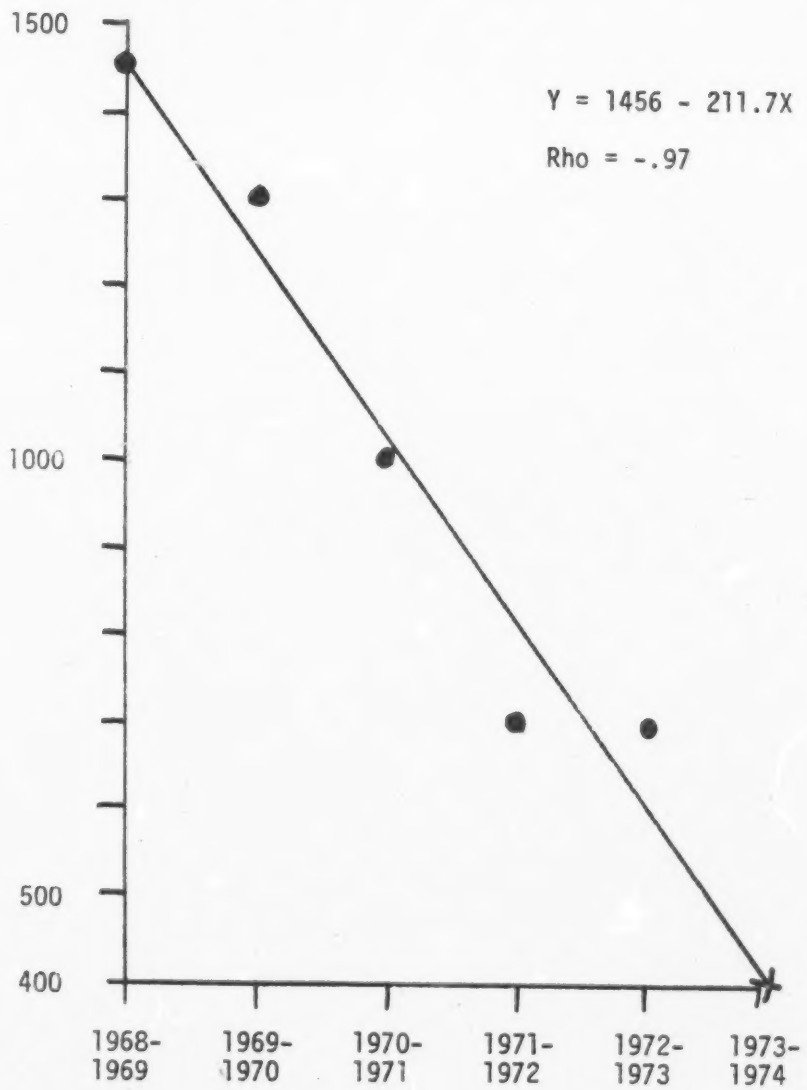
● = Actual enrollments

▲ = FY 1972-1973 Budget estimated enrollments

× = FY 1973-1974 Regression estimated enrollments



GRAPH NO. 44: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--EVENING COLLEGE, UNDERGRADUATE PART TIME STUDENTS--SUMMERS, 1968-1974



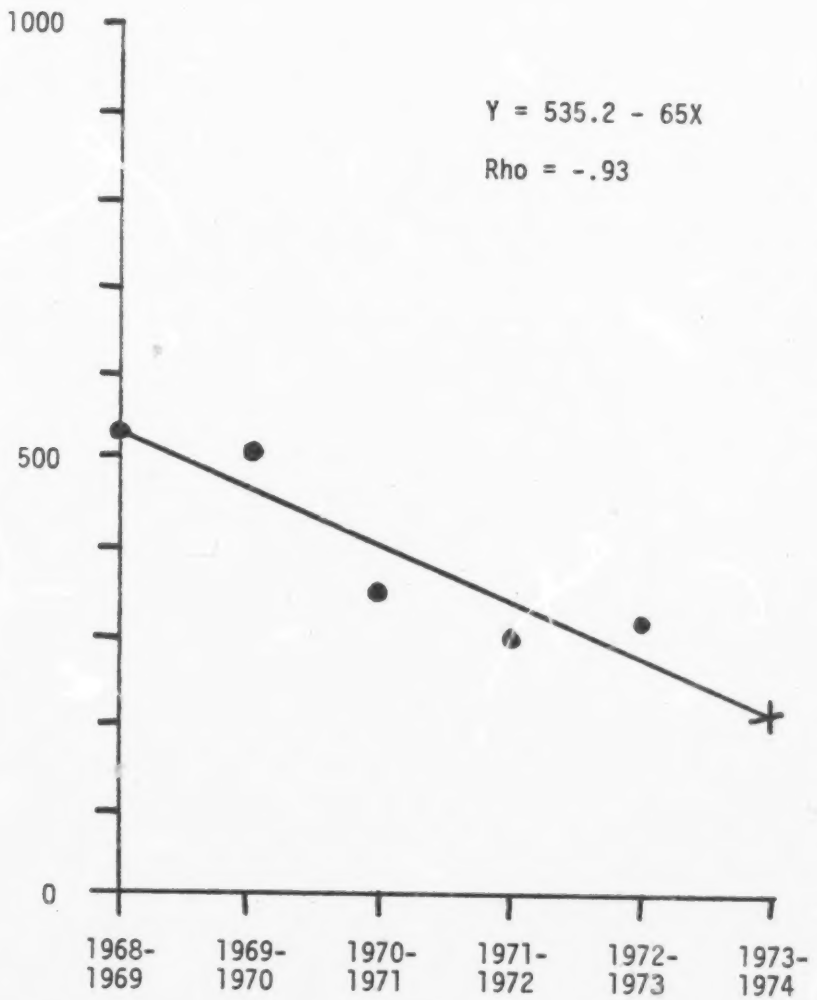
● = Actual enrollments

✕ = FY 1973-1974 Regression estimated enrollments

GRAPH NO. 45: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--EVENING COLLEGE, UNDERGRADUATE FULL TIME STUDENTS--FALLS, 1968-1974

● = Actual enrollments

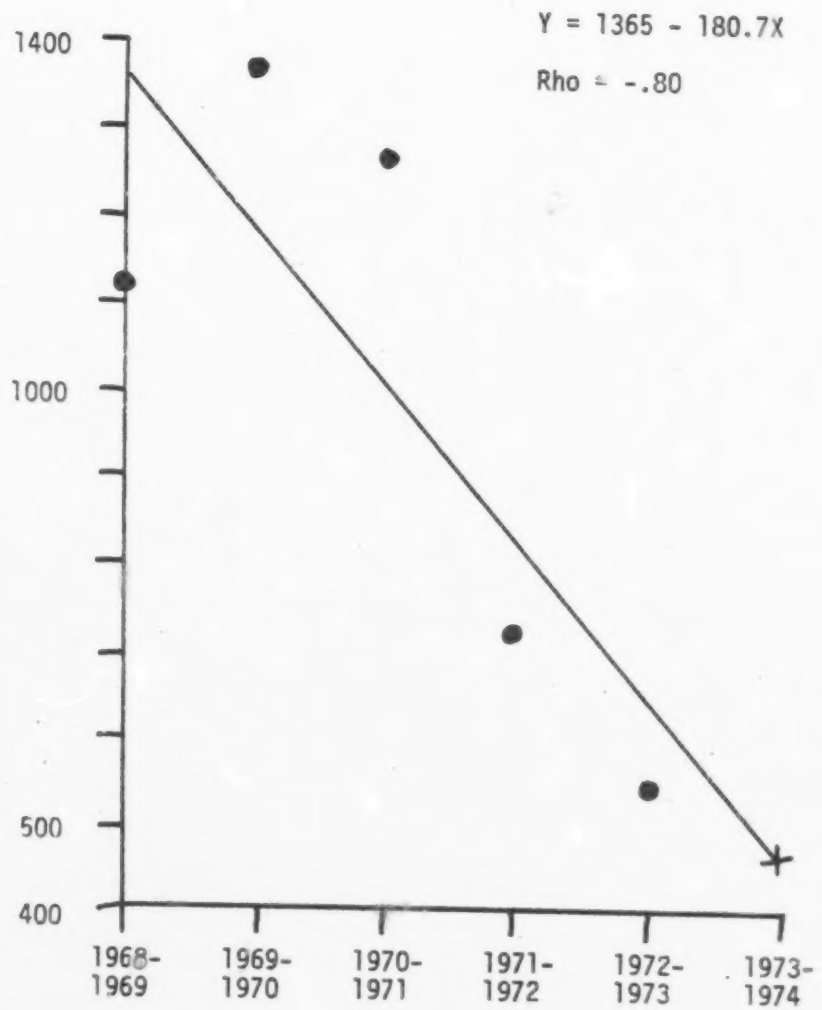
✕ = FY 1973-1974 Regression estimated enrollments



GRAPH NO. 46: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--EVENING COLLEGE, UNDERGRADUATE PART TIME STUDENTS--FALLS, 1968-1974

● = Actual enrollments

✕ = FY 1973-1974 Regression estimated enrollments

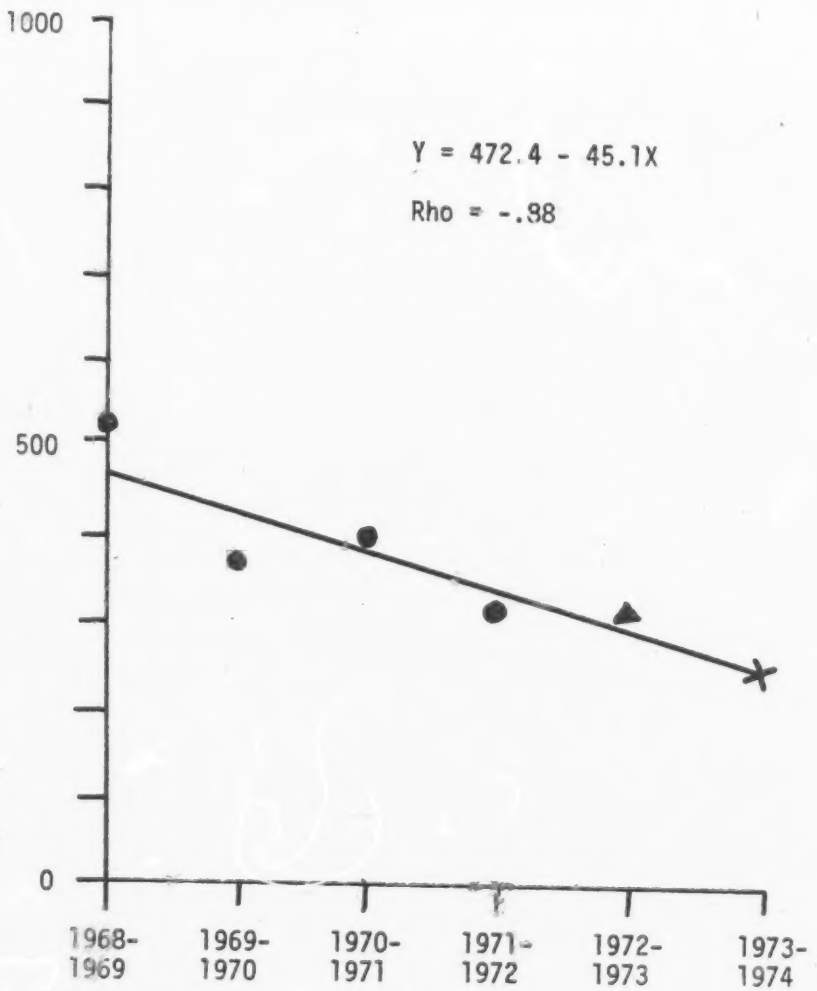


GRAPH NO. 47: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--EVENING COLLEGE, UNDERGRADUATE FULL TIME STUDENTS--SPRINGS, 1968-1974

● = Actual enrollments

▲ = FY 1972-1973 Budget estimated enrollments

✕ = FY 1973-1974 Regression estimated enrollments

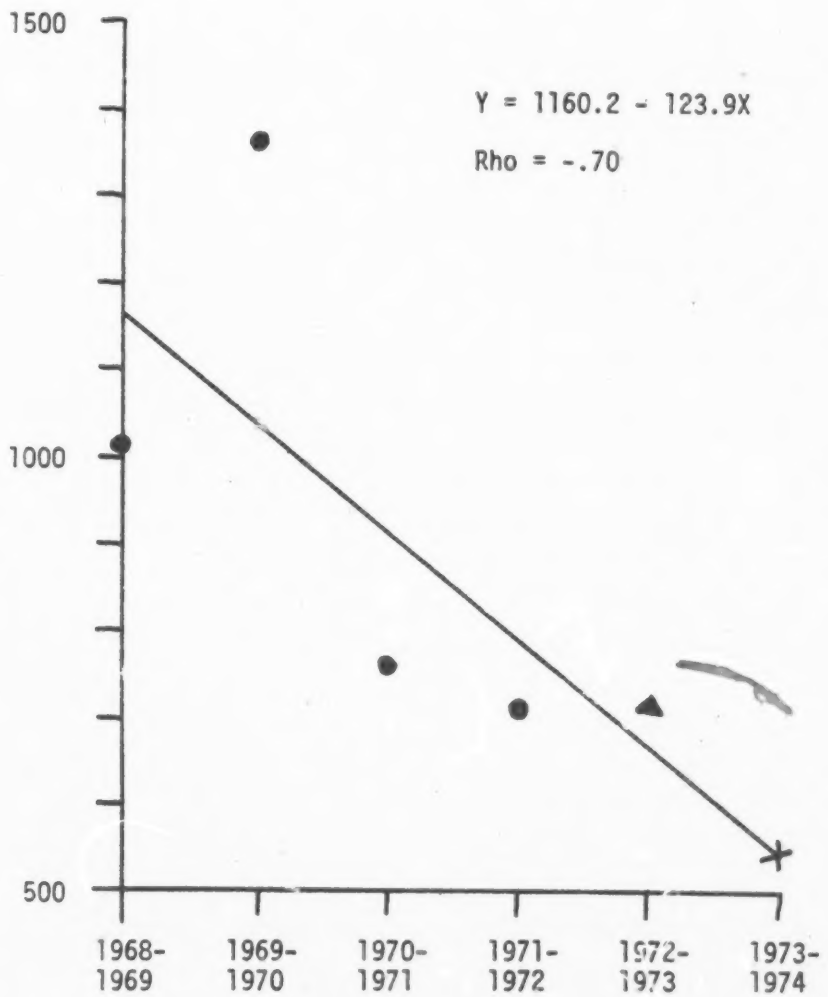


GRAPH NO. 43: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--EVENING COLLEGE, UNDERGRADUATE PART TIME STUDENTS--SPRINGS, 1968-1974

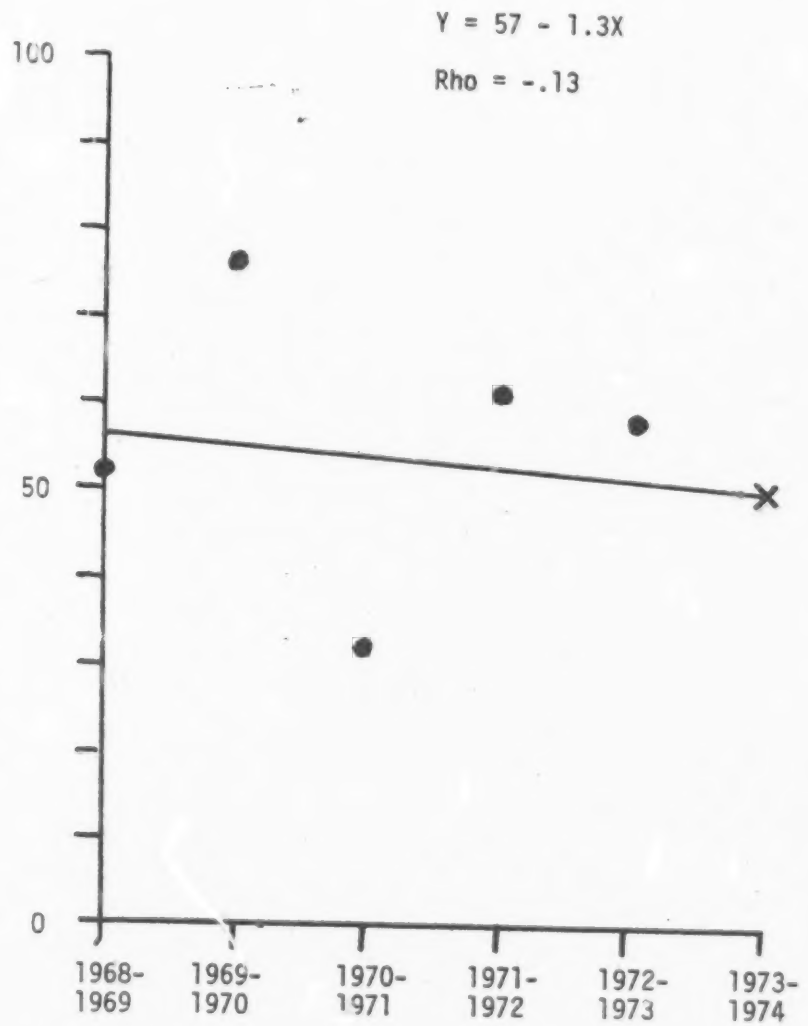
● = Actual enrollments

▲ = FY 1972-1973 Budget estimated enrollments

× = FY 1973-1974 Regression estimated enrollments



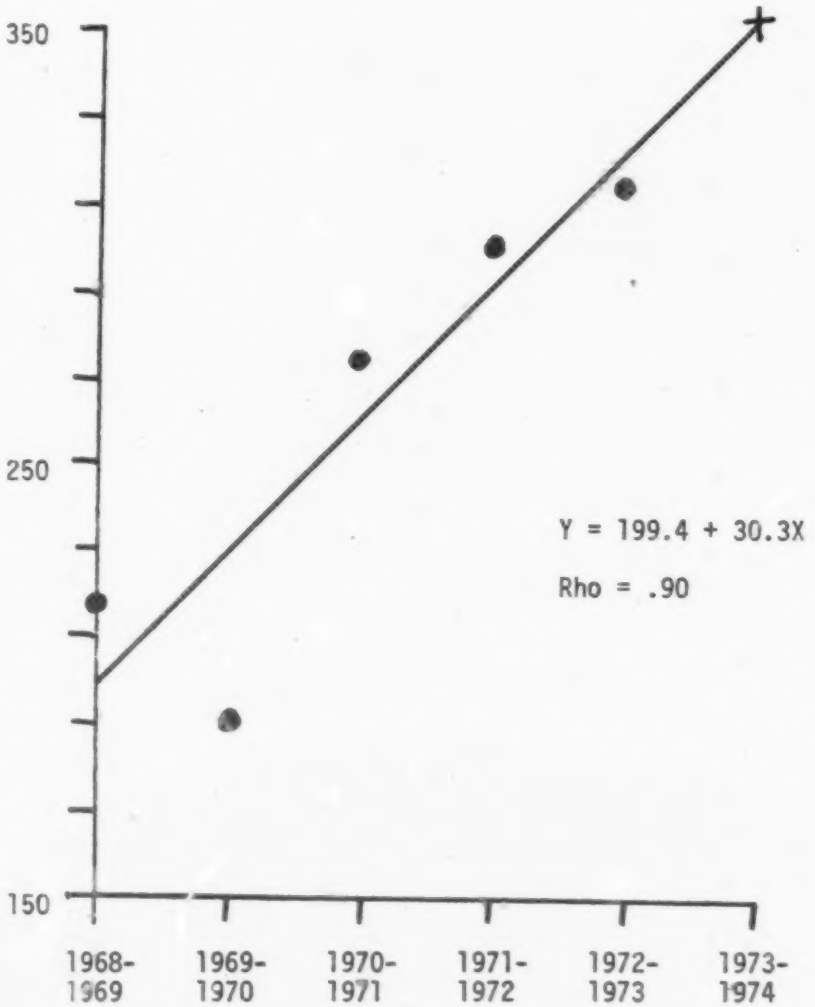
GRAPH NO. 49· BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--GRADUATE DIVISION (ALL MASTER'S DEGREE CURRICULA EXCEPT MBA), FULL TIME STUDENTS--FALLS, 1968-1974



GRAPH NO. 50: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--GRADUATE DIVISION (ALL MASTER'S DEGREE CURRICULA EXCEPT MBA), PART TIME STUDENTS--FALLS, 1968-1974

● = Actual enrollments

✕ = FY 1973-1974 Regression estimated enrollments

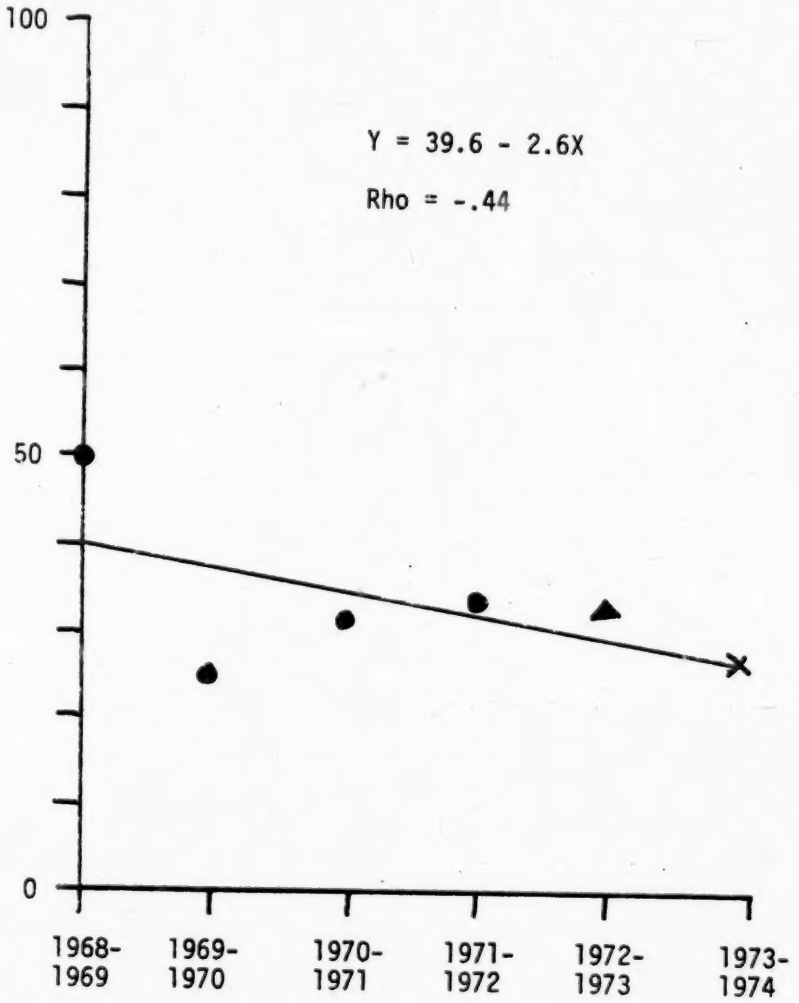


GRAPH NO. 51: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--GRADUATE DIVISION (ALL MASTER'S DEGREE CURRICULA EXCEPT MBA), FULL TIME STUDENTS--SPRINGS 1968-1974

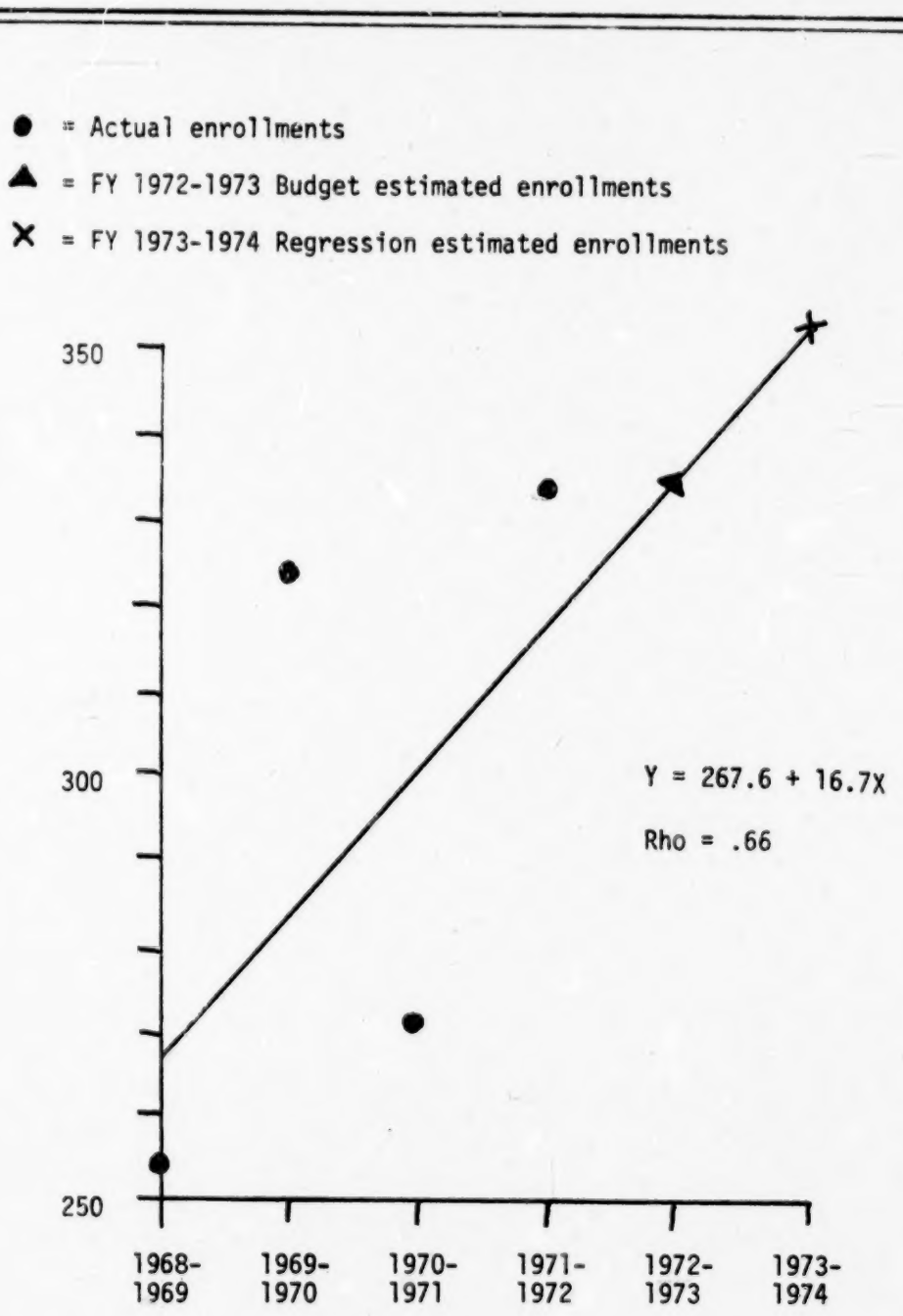
● = Actual enrollments

▲ = FY 1972-1973 Budget estimated enrollments

X = FY 1973-1974 Regression estimated enrollments



GRAPH NO. 52: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--GRADUATE DIVISION (ALL MASTER'S DEGREE CURRICULA EXCEPT MBA), PART TIME STUDENTS--SPRINGS, 1968-1974

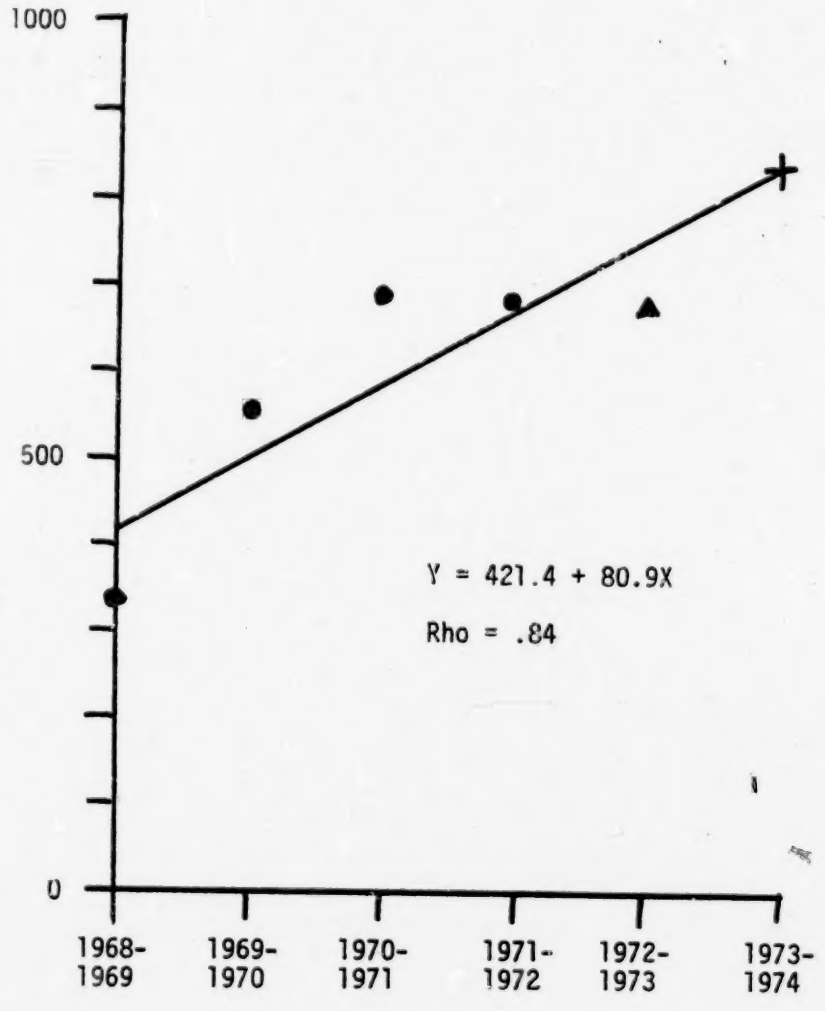


GRAPH NO. 53: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--INTERSESSION (PRIMARILY UNDERGRADUATE), PART TIME STUDENTS, 1968-1974

● = Actual enrollments

▲ = FY 1972-1973 Budget estimated enrollments

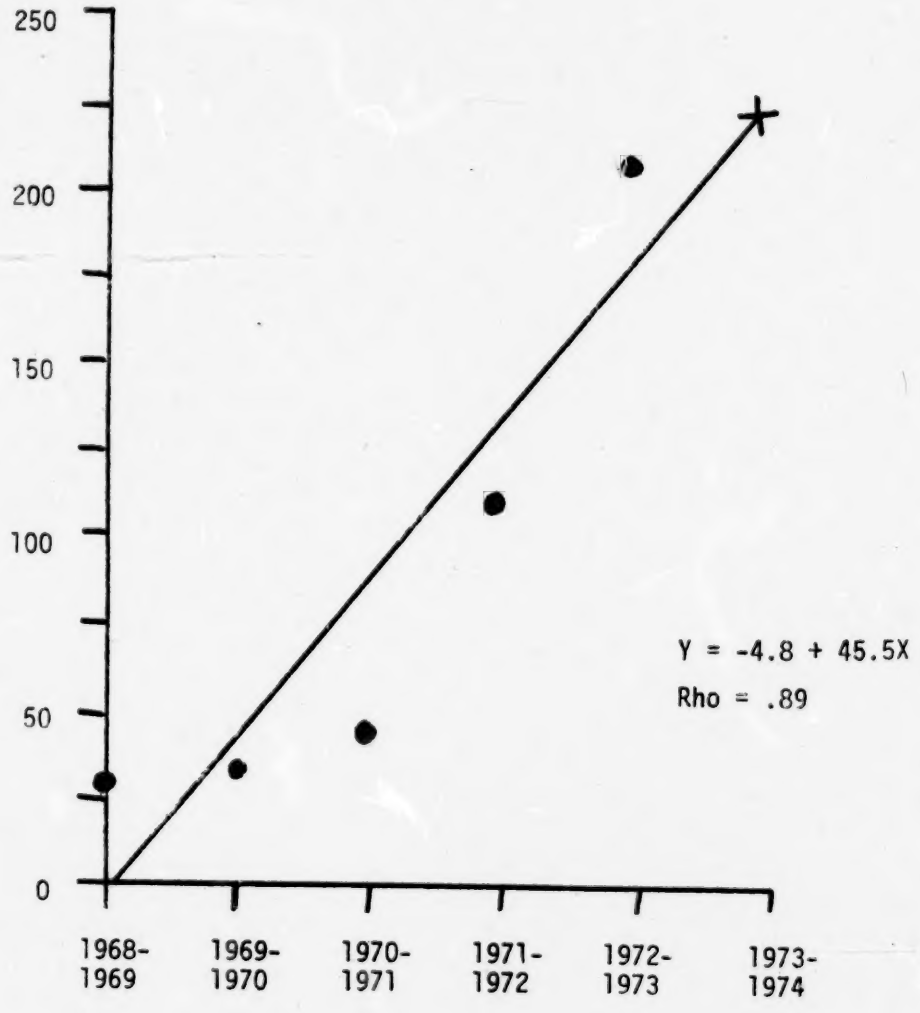
✕ = FY 1973-1974 Regression estimated enrollments



GRAPH NO. 54: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--LAW PART TIME STUDENTS--SUMMERS, 1968-1974

● = Actual enrollments

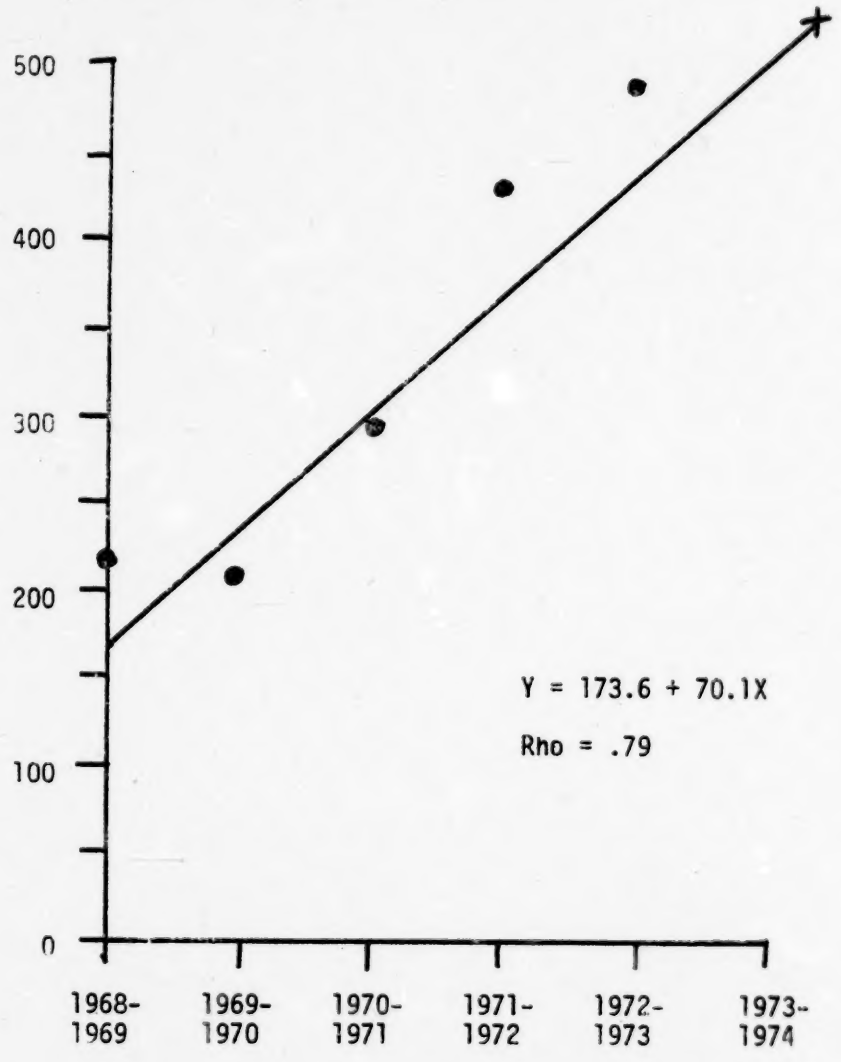
X = FY 1973-1974 Regression estimated enrollments



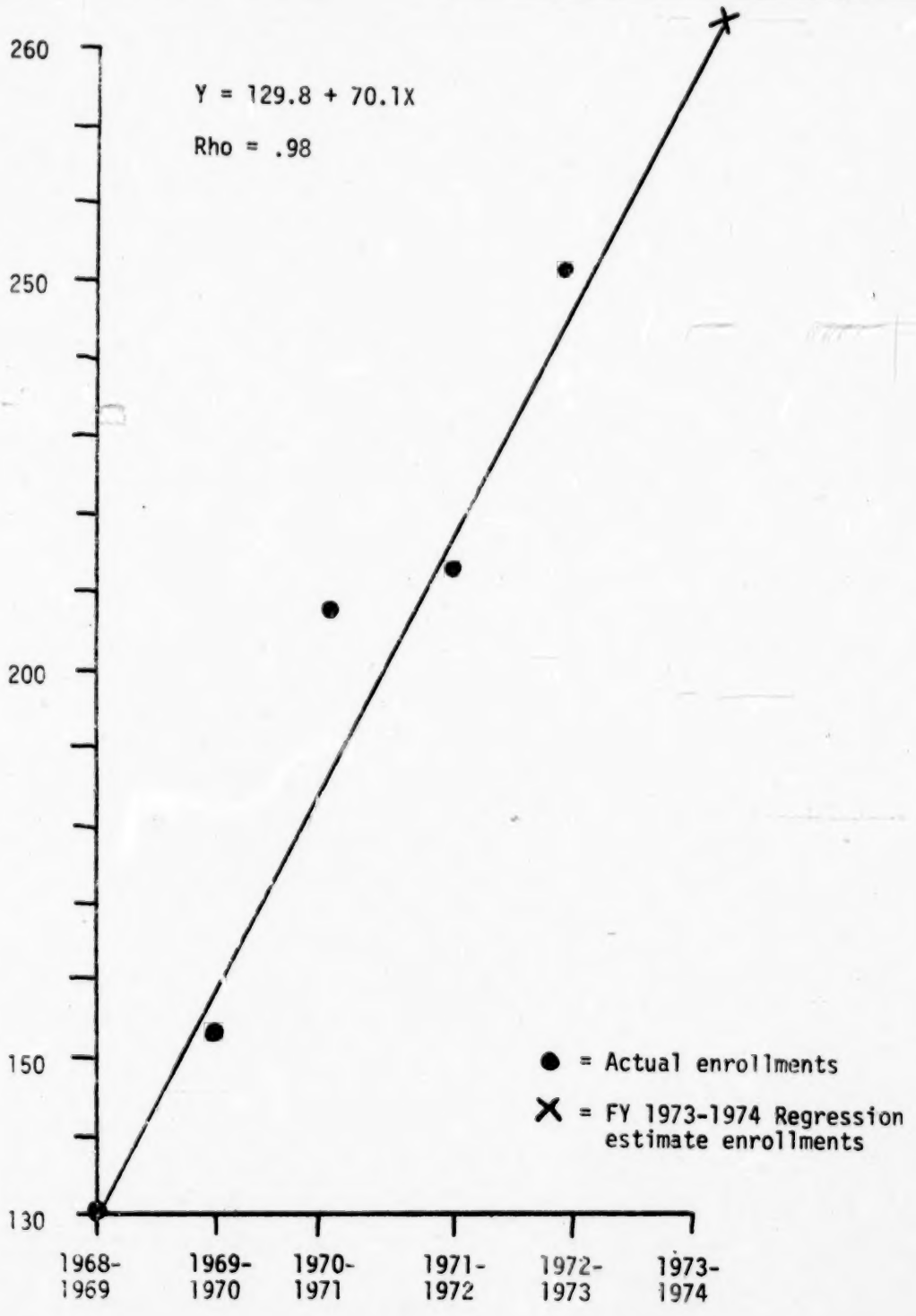
GRAPH NO. 55: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--LAW, FULL TIME STUDENTS--FALLS, 1968-1974

● = Actual enrollment

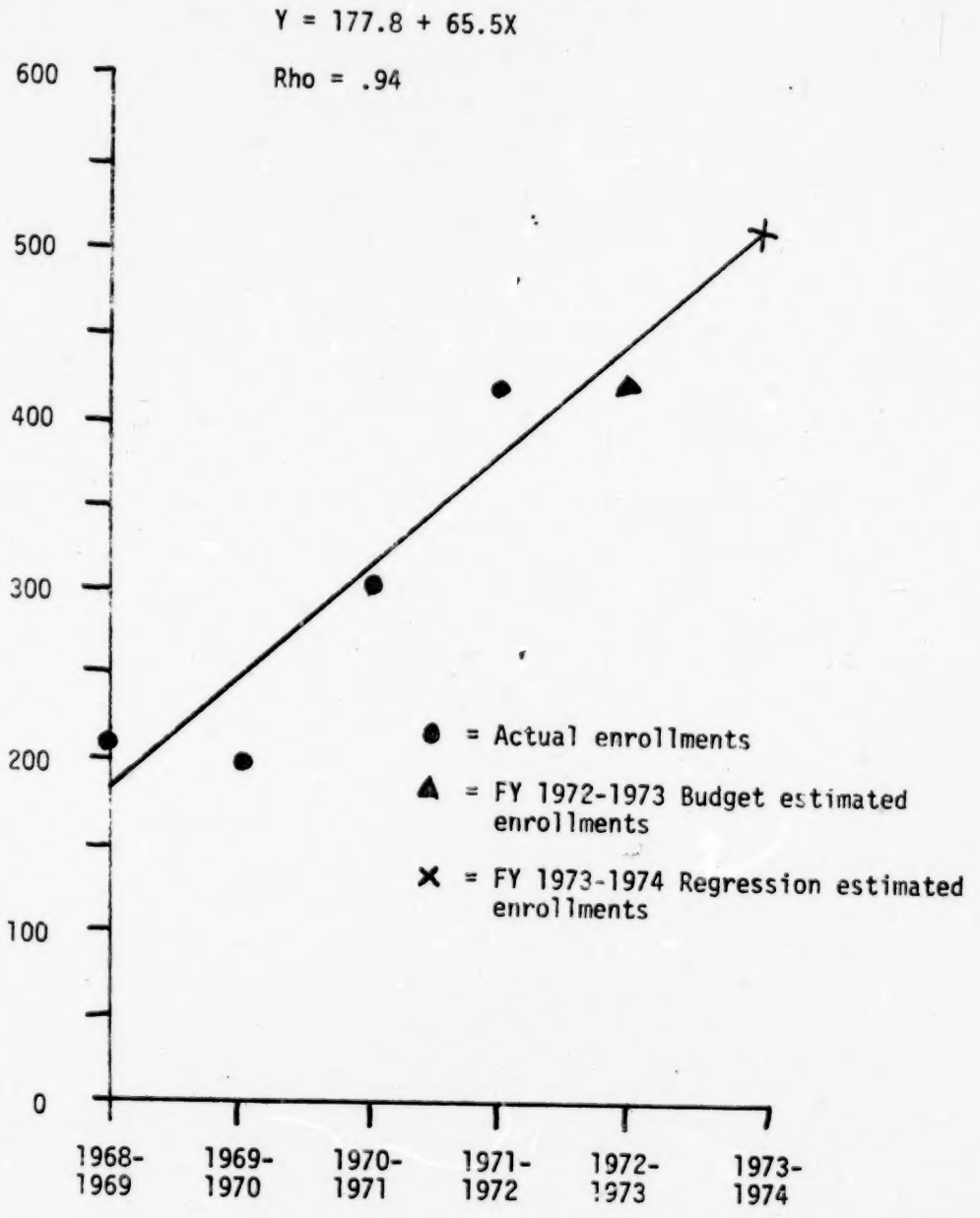
✕ = FY 1973-1974 Regression estimated enrollment



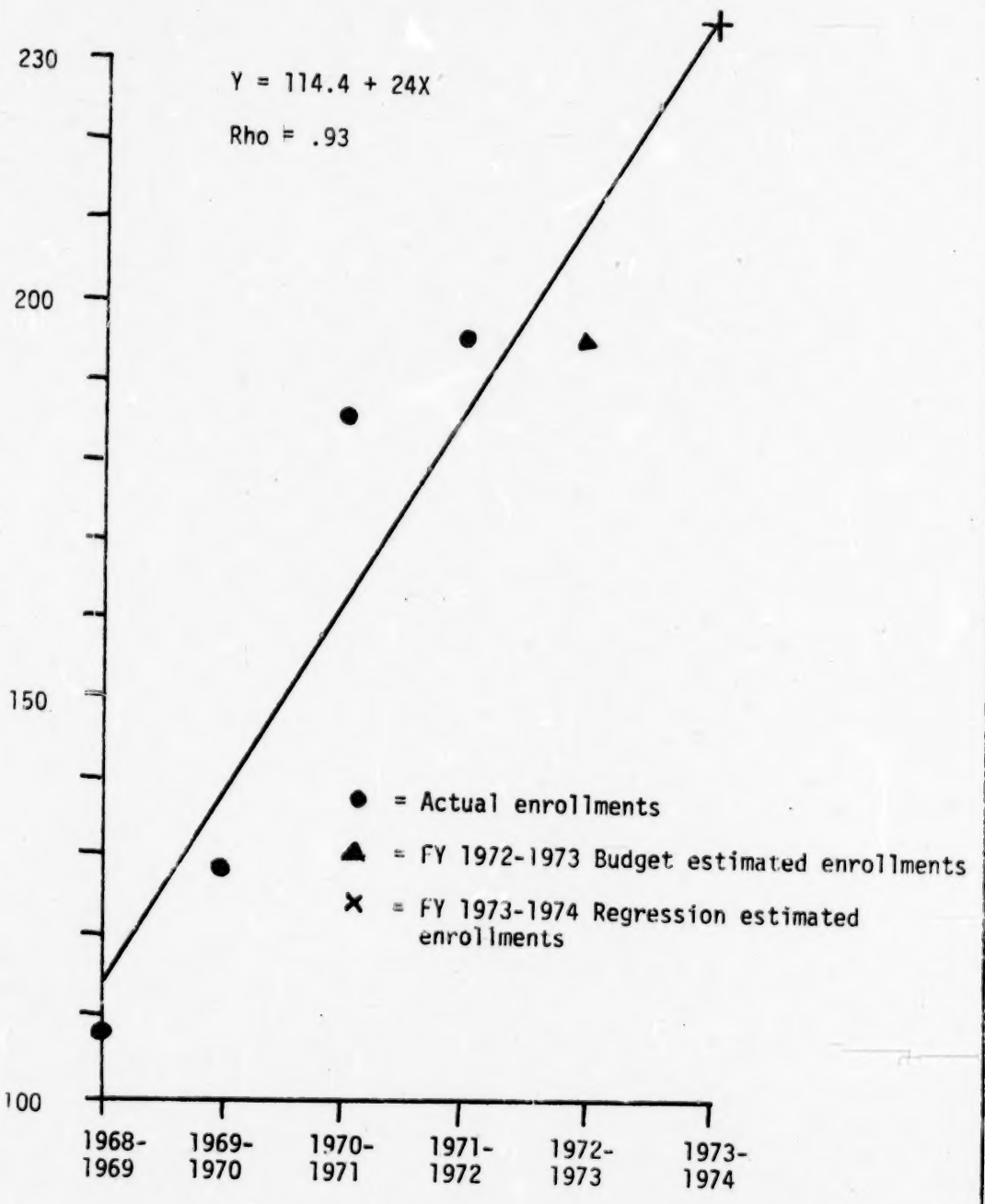
GRAPH NO. 56: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--LAW, PART TIME STUDENTS--FALLS, 1968-1974



GRAPH NO. 57: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--LAW, FULL TIME STUDENTS--SPRINGS, 1968-1974



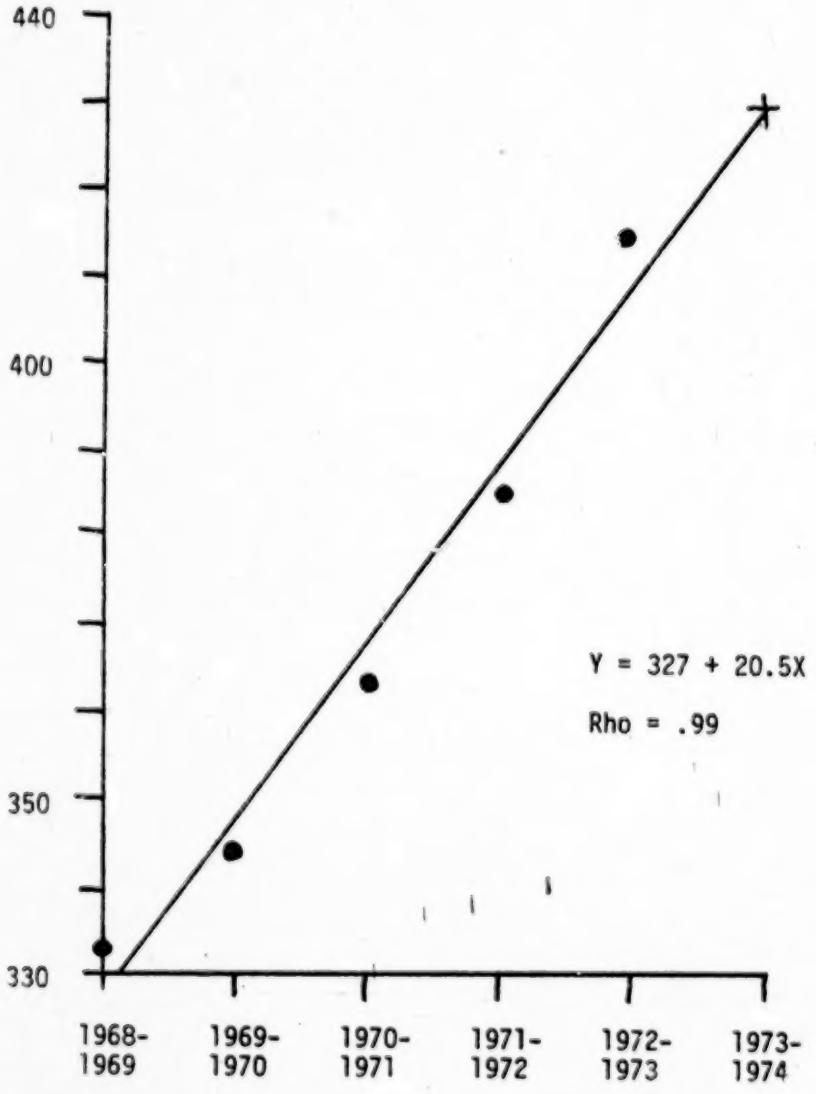
GRAPH NO. 58: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--LAW, PART TIME STUDENTS--SPRINGS, 1968-1974



GRAPH NO. 59: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--NURSING, FULL TIME STUDENTS--FALLS, 1968-1974

● = Actual enrollments

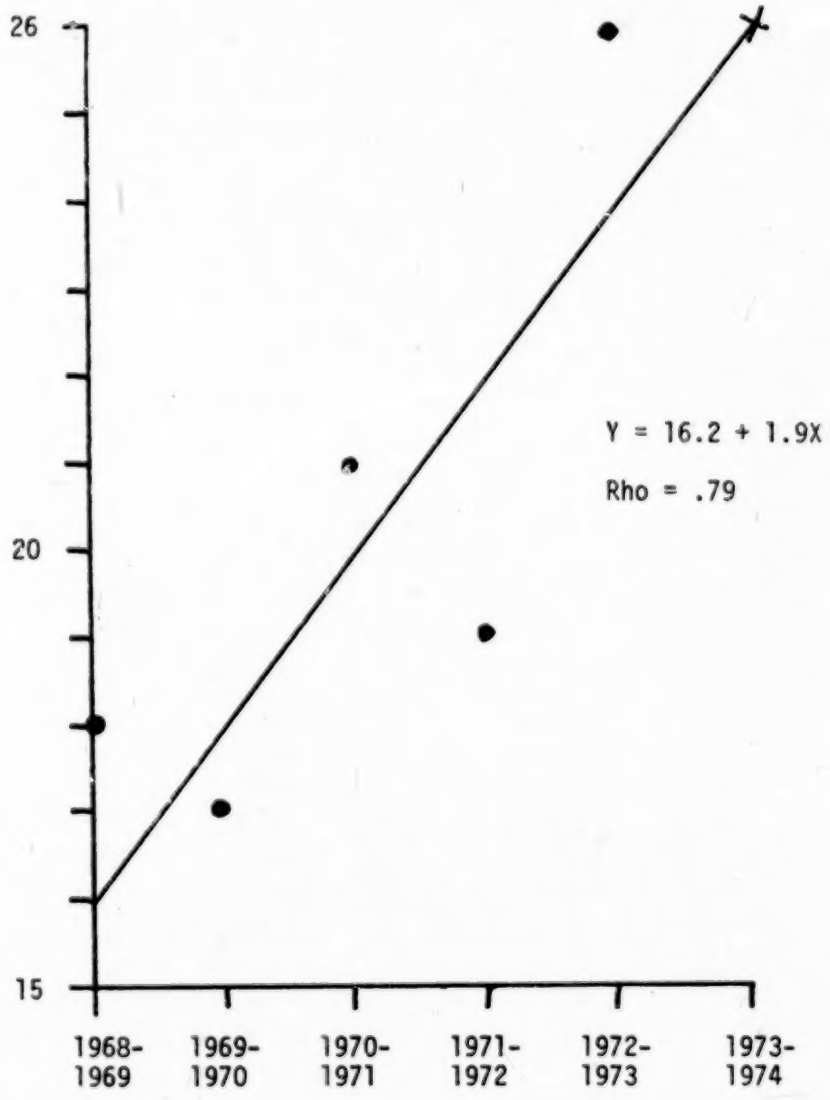
X = FY 1973-1974 Regression estimated enrollments



GRAPH NO. 60: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--NURSING, PART TIME STUDENTS--FALLS, 1968-1974

● = Actual enrollments

✕ = FY 1973-1974 Regression estimated enrollments

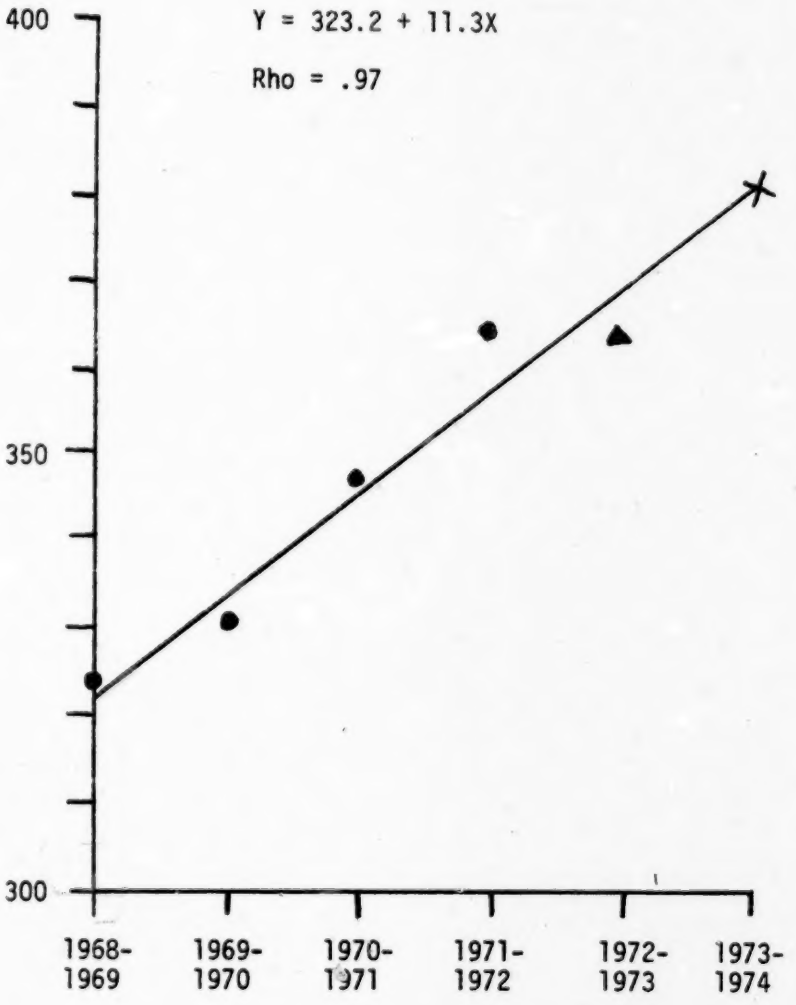


GRAPH NO. 61: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--NURSING, FULL TIME STUDENTS--SPRINGS, 1968-1974

● = Actual enrollments

▲ = FY 1972-1973 Budget estimated enrollments

✕ = FY 1973-1974 Regression estimated enrollments

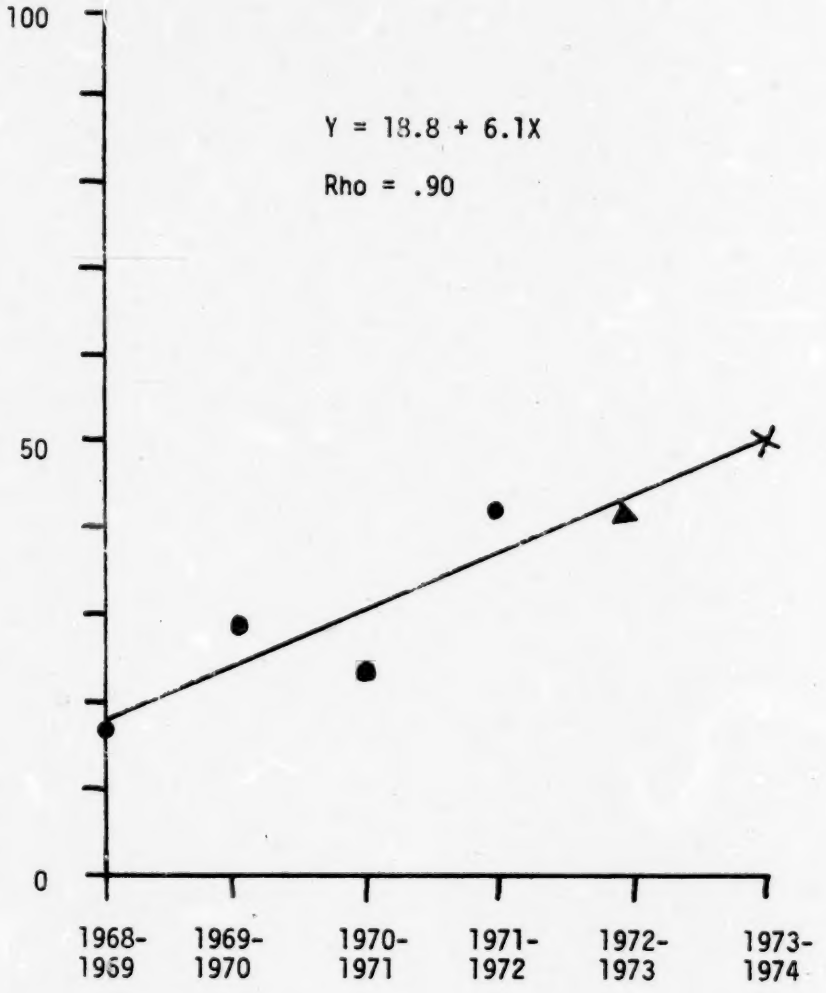


GRAPH NO. 62: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--NURSING, PART TIME STUDENTS--SPRINGS, 1968-1974

● = Actual enrollments

▲ = FY 1972-1973 Budget estimated enrollments

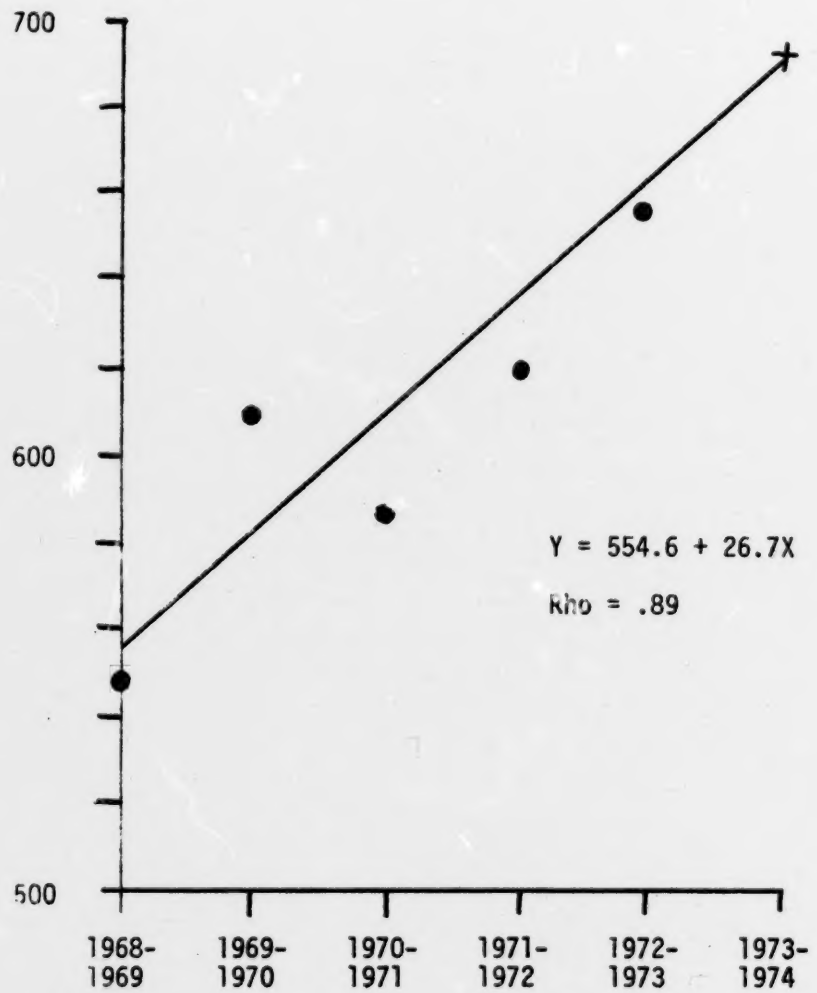
✕ = FY 1973-1974 Regression estimated enrollments



GRAPH NO. 63: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--SCIENCES, FULL TIME STUDENTS--FALLS, 1968-1974

● = Actual enrollments

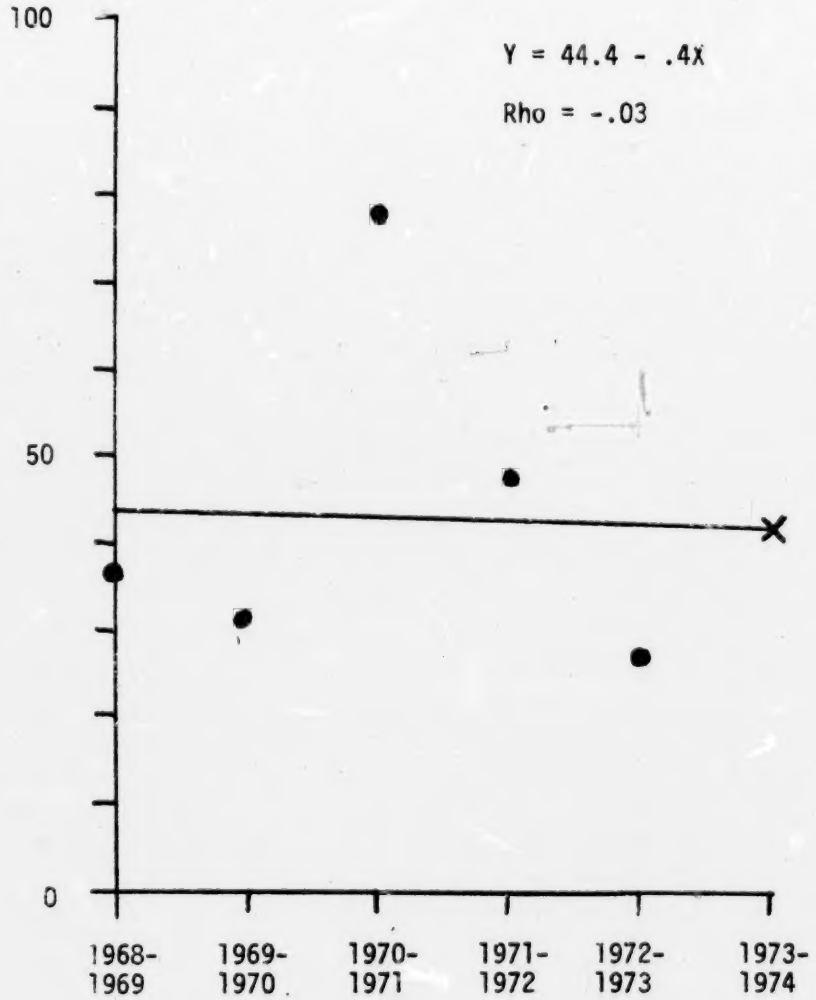
X = FY 1973-1974 Regression estimated enrollments



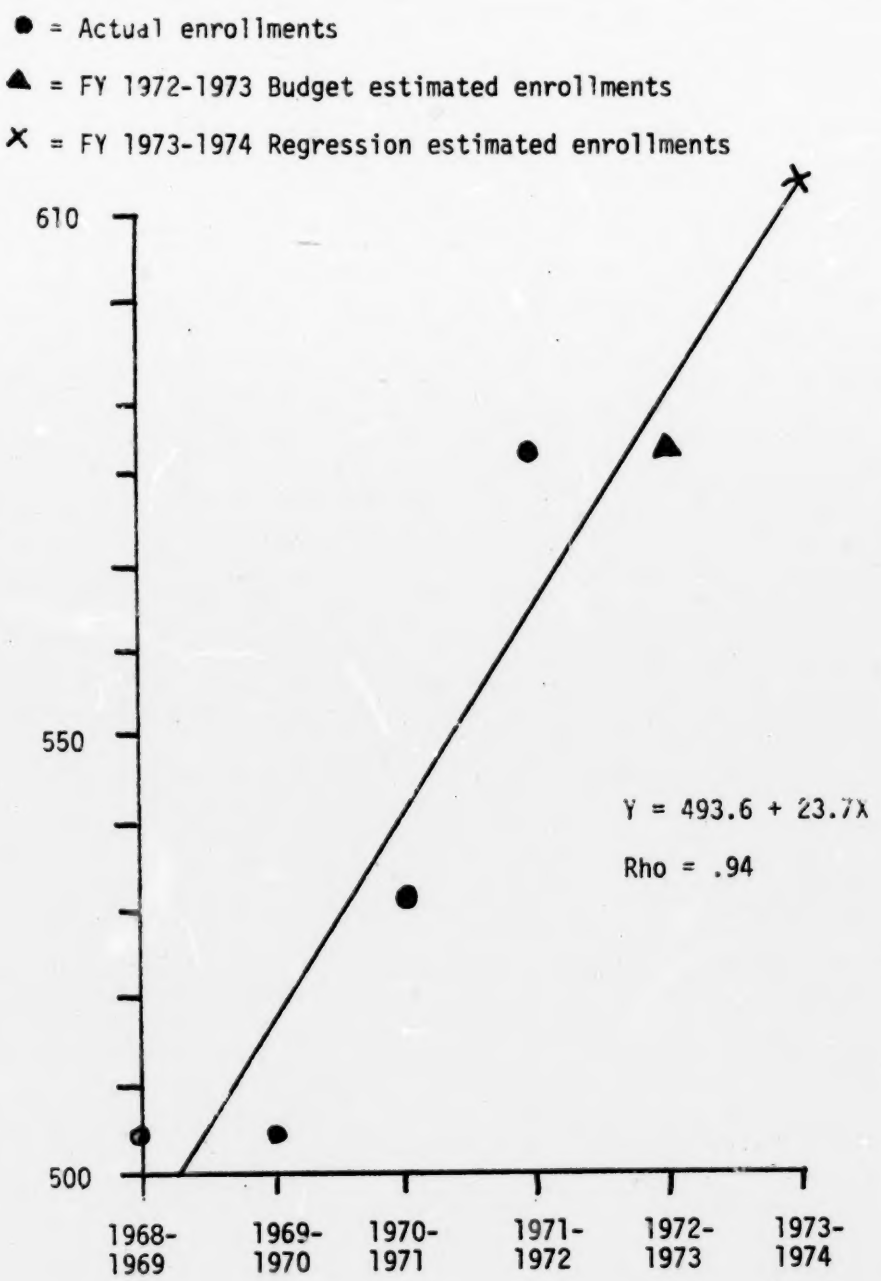
GRAPH NO. 64: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--SCIENCES, PART TIME STUDENTS--FALLS, 1968-1974

● = Actual enrollments

✕ = FY 1973-1974 Regression estimated enrollments



GRAPH NO. 65: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--SCIENCES, FULL TIME STUDENTS--SPRINGS, 1968-1974

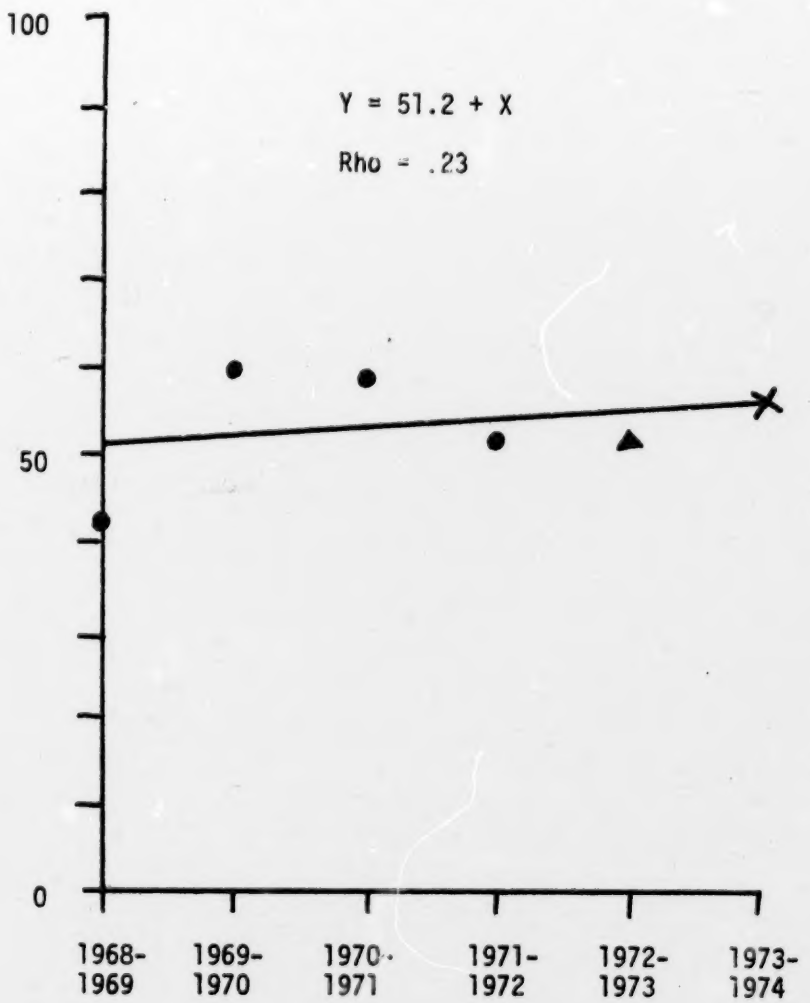


GRAPH NO. 66: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--SCIENCES, PART TIME STUDENTS--SPRINGS, 1968-1974

● = Actual enrollments

▲ = FY 1972-1973 Budget estimated enrollments

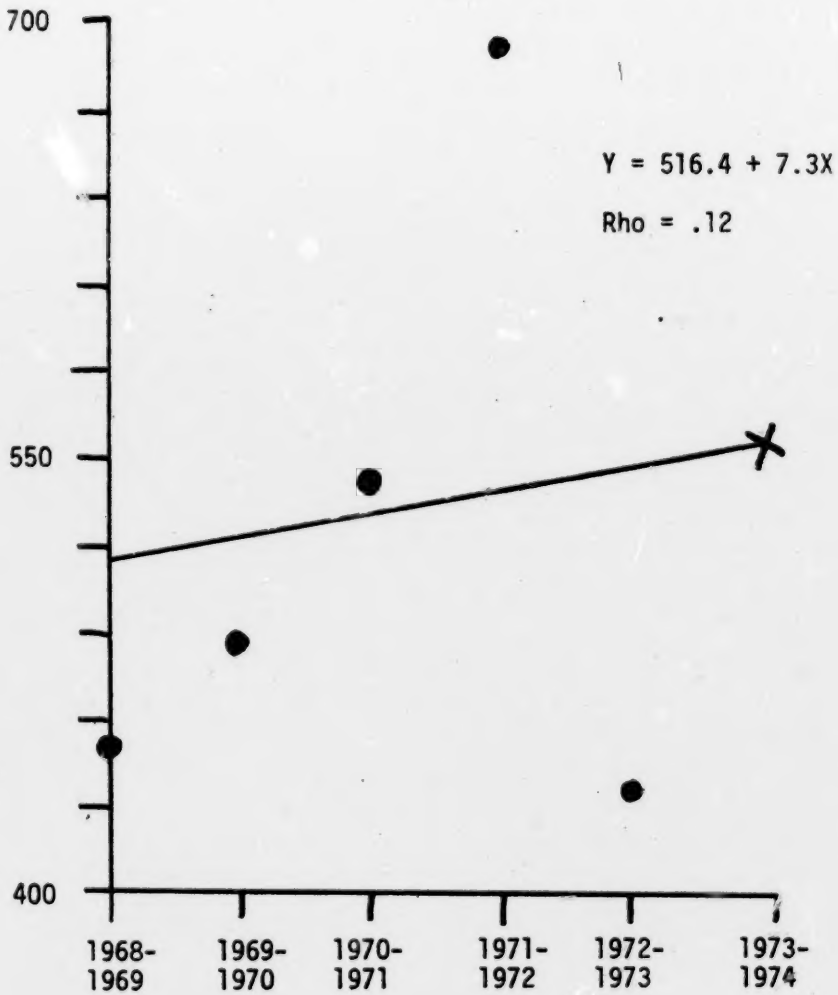
X = FY 1973-1974 Regression estimated enrollments



GRAPH NO. 67: BUDGETED INSTRUCTIONAL AREA ENROLLMENTS--SUMMER SESSION, GRADUATE STUDENTS, PART TIME--1968-1974

● = Actual enrollments

✕ = FY 1973-1974 Regression estimated enrollments



GRAPH NO. 68: BUDGETED INSTRUCTIONAL AREA ENROLLMENT--SUMMER SESSION, UNDERGRADUATE STUDENTS AND OTHERS, PART TIME--1968-1974

● = Actual enrollments

✕ = FY 1973-1974 Regression estimated enrollments